



## **Enterprise Chat and Email Installation Guide, Release 11.5(1)**

**For Unified Contact Center Enterprise**

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# Preface

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Welcome to the Enterprise Chat and Email (ECE) feature, which provides multichannel interaction software used by businesses all over the world as a core component to the Unified Contact Center Enterprise product line. ECE offers a unified suite of the industry's best applications for chat and email interaction management to enable a blended agent for handling of web chat, email and voice interactions.

## Audience

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*Enterprise Chat and Email Installation Guide* is intended for installation engineers, system administrators, database administrators, and others who are responsible for installing and maintaining Enterprise Chat and Email (ECE) installations that are integrated with Cisco Unified Contact Center Enterprise (Unified CCE).

The best way to use the installation guide is to print it, read the entire guide, and then start at the beginning and complete each pre-installation, installation, and post-installation task, in sequence.

## Obtaining Documentation and Submitting a Service Request

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For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation*, at: <http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html>.

Subscribe to *What's New in Cisco Product Documentation*, which lists all new and revised Cisco technical documentation as an RSS feed and delivers content directly to your desktop using a reader application. The RSS feeds are a free service.

## Documentation Feedback

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We appreciate your comments.

## Field Alerts and Field Notices

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Field Notices through the Product Alert Tool on Cisco.com. This tool enables you to create a profile to receive announcements by selecting all products of interest.

Log into [www.cisco.com](http://www.cisco.com) and then access the tool at <http://www.cisco.com/cisco/support/notifications.html>

## Document Conventions

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This guide uses the following typographical conventions.

| Convention      | Indicates                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------|
| <i>Italic</i>   | Emphasis.<br>Or the title of a published document.                                                                   |
| <b>Bold</b>     | Labels of items on the user interface, such as buttons, boxes, and lists.<br>Or text that must be typed by the user. |
| Monospace       | The name of a file or folder, a database table column or value, or a command.                                        |
| <i>Variable</i> | User-specific text; varies from one user or installation to another.                                                 |

*Document conventions*

## Other Learning Resources

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Various learning tools are available within the product, as well as on the product CD, and our web site. You can also request formal end-user or technical training.

## Online Help

The product includes topic-based as well as context-sensitive help.

| Use                                                                                                    | To view                                                                                                           |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|  <b>Help</b> button | Topics in <i>Enterprise Chat and Email Help</i> ; the Help button appears in the console toolbar on every screen. |
| <b>F1</b> keypad button                                                                                | Context-sensitive information about the item selected on the screen.                                              |

*Online help options*

## Document Set

The latest versions of all Cisco documentation can be found online at <http://www.cisco.com>

- ▶ For general access to Cisco Voice and Unified Communications documentation, go to [http://www.cisco.com/en/US/products/sw/voicesw/tsd\\_products\\_support\\_category\\_home.html](http://www.cisco.com/en/US/products/sw/voicesw/tsd_products_support_category_home.html)

The ECE document set contains the following guides:

- ▶ *System Requirements for Enterprise Chat and Email*
- ▶ *Enterprise Chat and Email Installation Guide*
- ▶ *Enterprise Chat and Email Browser Settings Guide*

### User guides for agents and supervisors

- ▶ *Enterprise Chat and Email Agent's Guide*
- ▶ *Enterprise Chat and Email Supervisor's Guide*

### User guides for administrators

- ▶ *Enterprise Chat and Email Administrator's Guide to Administration Console*
- ▶ *Enterprise Chat and Email Administrator's Guide to Routing and Workflows*
- ▶ *Enterprise Chat and Email Administrator's Guide to Chat and Collaboration Resources*
- ▶ *Enterprise Chat and Email Administrator's Guide to Email Resources*
- ▶ *Enterprise Chat and Email Administrator's Guide to Reports Console*
- ▶ *Enterprise Chat and Email Administrator's Guide to System Console*
- ▶ *Enterprise Chat and Email Administrator's Guide to Tools Console*

# 1 Planning

- ▶ [Identifying Components](#)
- ▶ [Understanding Deployment Models](#)
- ▶ [Planning Components for Specific Configurations](#)
- ▶ [Installing ECE](#)

ECE can be installed in multiple configurations, ranging from a simple collocated installation, to many flavors of distributed installations. This chapter lists the components that make up ECE deployment and available configuration options. It also helps you plan your installation.

## Identifying Components

---

All ECE installations have the following six components:

- ▶ [File Server Component](#)
- ▶ [Database Server Component](#)
- ▶ [Messaging Server Component](#)
- ▶ [Application Servers Component](#)
- ▶ [Web Servers Component](#)
- ▶ [Services Server](#)

### File Server Component

The file server is used to store reports templates, reports output, license files, and startup scripts. There is only one file server in a configuration.

### Database Server Component

All ECE databases are created on the database server. The installation program creates the following databases:

- ▶ A master database, that stores system configuration information to manage services.
- ▶ An active database, where all business and interaction data is stored. This is also referred to as the partition database.
- ▶ An archive database, where all archived data is stored. This database is created only in deployments that use the standard edition of MSSQL Server.
- ▶ A reports database, where all data used by the reports module is stored. This database is created only in deployments that use the enterprise edition of MSSQL Server.

The master and active databases are installed on the same machine. The archive or reports databases can be installed on different machines.

## Messaging Server Component

The messaging server provides a centralized location for the exchange of information asynchronously among various components of ECE application through the sending and receiving of messages.

For example,

- ▶ The application server publishes a message to the workflow cache process to refresh its cache when a user modifies a workflow in the Administration Console.

A configuration can have only one messaging server.

Components that use messaging are listed in the following table.

| Component                      | Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Email Workflow                 | <ul style="list-style-type: none"><li>▶ The Workflow Assignment Service publishes a message to application servers when a new email is assigned to a user.</li><li>▶ The application server publishes a message to Workflow Cache Service when any workflow is created or modified from the Administration Console. The Workflow Cache Service publishes a message to the Workflow Service after it rebuilds its cache.</li></ul>                                                                                                                                                                                                   |
| Email Retriever and Dispatcher | The application server publishes a message to the Retriever and Dispatcher Services when an email alias is created or modified from the Administration Console.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Miscellaneous                  | <ul style="list-style-type: none"><li>▶ The Scheduler Service publishes a message to the Reports Service when the schedule for a report fires.</li><li>▶ The application server publishes a message to the Distributed Services Manager (DSM) whenever an agent logs in to or logs out of the application.</li><li>▶ The application server publishes a message to all other application servers and services when a Custom attribute is created from the Tools Console.</li><li>▶ The application server publishes a message to other application servers every time an article or topic is added, modified, or removed.</li></ul> |

## Application Servers Component

The application server houses the business logic responsible for interactive responses to all user-interface requests—across all classes of users including customers, agents, administrators, knowledge authors, system administrators. It handles requests for operations from a user (the web client), interprets user requests and delivers responses as web pages, constructed dynamically using JSP (based on the user request).

A configuration can have more than one application server. The number of application servers in a deployment will depend on the amount of user load to be handled. For details about sizing, see the *Enterprise Chat and Email Design Guide*.

## Web Servers Component

The web server is used to serve static content to the browser.

It gets requests from, and serves static content such as images, java applets, and client-side JavaScript code to a web browser. All dynamic requests are routed to the application server for further processing and generation of dynamic content. The web server component is often installed on the same machine as the application server, but can also be installed on a different physical machine.

Installing the web server does not need access to any other ECE component. The web server can be installed outside firewall. A configuration can have multiple web servers, with a one-to-one mapping between a web server and an application server. The web servers can be separated from their corresponding application servers across a firewall.

No user identification is required at the web server. Access to the application functionality is controlled at the application server layer.

## Services Server

ECE has processes that perform specific business functions, such as fetching emails from a POP3 or IMAP server, sending emails through an SMTP server, processing workflows, assigning chats to agents, etc. All services run on the services server and are managed by the Distributed Service Manager (DSM). Framework services that manage these remote services also run on the services server.

A configuration can have only one services server.

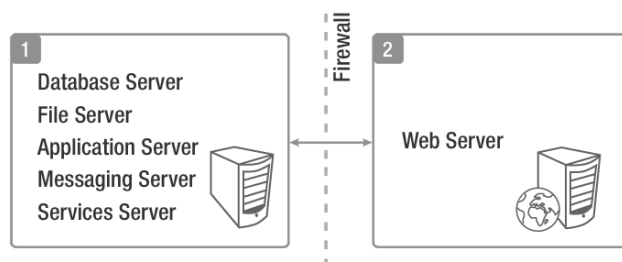
## Understanding Deployment Models

With its modular, component-based architecture ECE caters effortlessly to the growing demands for increased concurrent user loads. To provide the flexibility to suit deployments of varied sizes, ECE supports components that may be distributed across various servers in a deployment. This section provides details of the possible deployment options.

- ▶ **Collocated Deployment for ECE:** The web server is installed on a separate machine and all other components are installed on one machine. The web server may be installed outside the firewall, if required.
- ▶ **Distributed-server deployment:** Components are distributed over two or more servers. A wide range of options are available for distributed-server configurations. The database is usually installed on a dedicated server, and the other components are installed on a separate server or spread over two or more servers.

## Collocated Deployment for ECE

The web server is installed on a separate machine outside the firewall.

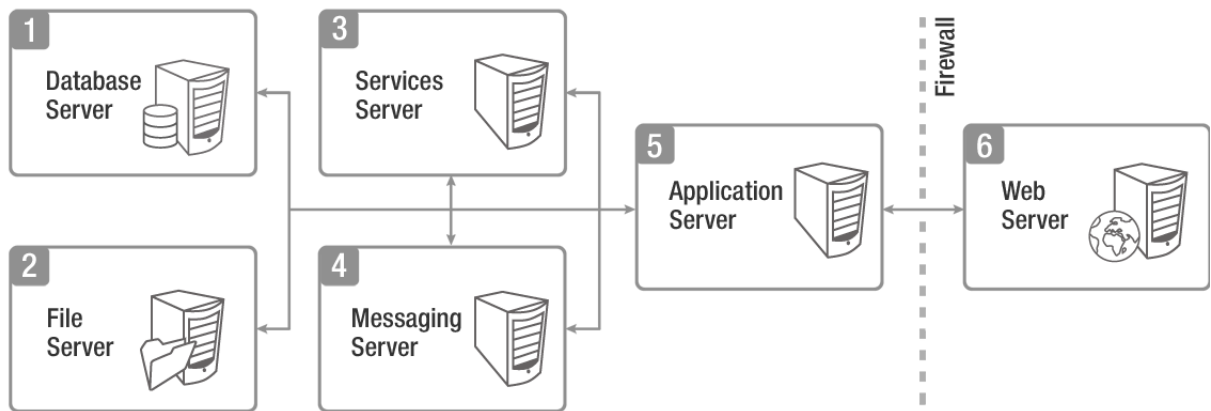


*Collocated deployment for ECE*

# Distributed-Server Deployment

## Distributed Configuration With Web Server Outside a Firewall

In this configuration, each component is on a separate machine, with the web server installed outside the firewall. The application, messaging, services, and web servers in this configuration can be restarted without restarting any other servers.

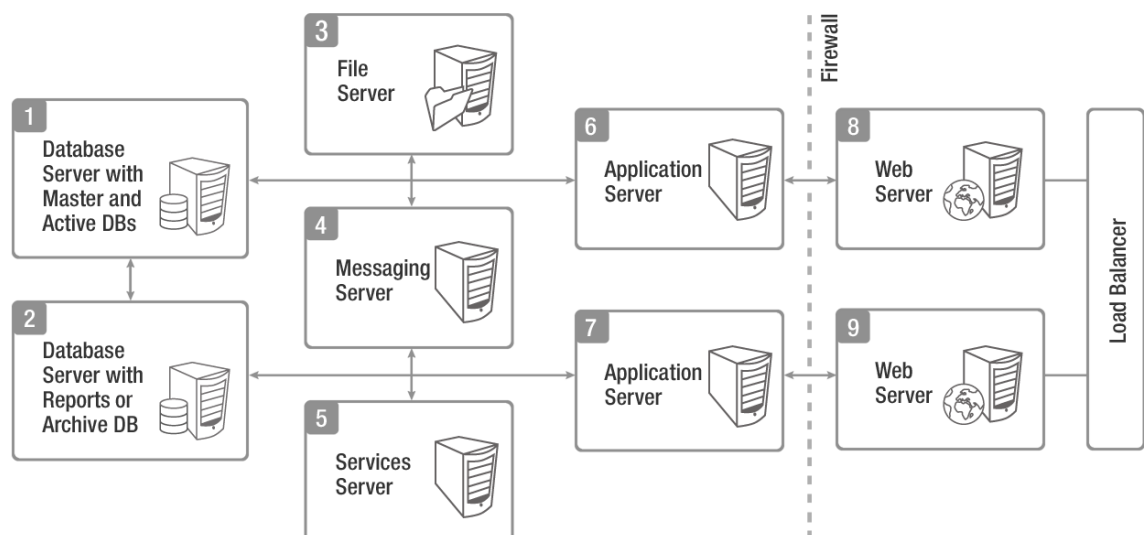


*Distributed configuration with web server outside a firewall*

## Complex Distributed Configuration With Components on Different Machines

This configuration has each component on a different machine, with the following additional features:

- ▶ Reports and Archive DBs are installed on a separate machine.
- ▶ Multiple web-application server pairs are used with a load balancer.



*Complex distributed-server configuration*

# Planning Components for Specific Configurations

The installation program creates the master and active databases.

Deployments that use the standard edition of MSSQL Server, get the following additional database:

- ▶ An archive database

Deployments that use the enterprise edition of MSSQL Server, get the following additional features:

- ▶ A reports database.
- ▶ The ability to distribute active and reports database tables among four different filegroups. For best performance, filegroups should be located on different physical volumes, each with a different disk controller, to maximize disk throughput. The following database tables are part of these file groups:
  - EGML\_EMAIL\_DATA
  - EGML\_EMAIL\_DATA\_ALT
  - EGPL\_EVENT\_HISTORY\_CASE\_MGMT
  - EGML\_EMAIL\_ATTACHMENT
  - EGML\_EMAIL\_ATTACHMENT\_LINK
  - EGOFR\_SESSION
  - EGPS\_SESSION\_ATTR
  - EGPS\_INTERACTION
  - EGPS\_INTERACTION\_ATTR
  - EGPS\_EVENT
  - EGPS\_EVENT\_ATTR
  - EGSS\_SESSION
  - EGSS\_SESSION\_ENTRY
  - EGLV\_SURVEY

## Planning Database Server Distribution

- ▶ The master and active databases are installed on the same database server. The reports databases can be installed on the same machine as the master and active databases or on different machines. Since the archive database can grow to be quite large, and operations performed on it can be slower, and can impact the overall performance of the system, it is typically installed on a different machine. This is optional, but it is the recommended practice.

If the archive or reports database is to be installed on a different machine, make sure that you complete the steps described in the [“Configuring Database Servers” on page 26](#). You may also need to complete certain tasks described in [“Setting Up User Accounts and Permissions” on page 22](#).

## Choosing Authentication Method for Database Connectivity

- ▶ The application supports two methods of authentication for connecting to the database.
  - SQL Server authentication

- Windows authentication
- ▶ As part of the installation process, you will be asked to select the authentication method. Your selection will depend on the security policies of your organization, and should be consistent with the authentication method configured in SQL Server.

If you choose Windows authentication, certain additional steps must be completed before you begin installing the application. These steps are outlined in the [“Setting Up User Accounts and Permissions” on page 22](#). Also refer to [“Configuring Database Servers” on page 26](#).

## Planning the Messaging Server

- ▶ The messaging server can be installed on a separate machine, or on the same machine where the other components are installed, for example, install the messaging server along with the application server. To do this, select both the Application server and the Messaging server items in the Installation options screen while installing a distributed-server configuration.

If the messaging server is on a separate machine, it can be restarted independently, without affecting any of the application servers in the configuration.

## Planning Application and Web Servers

- ▶ ECE can be installed with multiple application servers. The number of application servers in your configuration depends on the total number of concurrent agents to be supported. ECE can be installed with multiple web servers. The number of web servers in a deployment depends on the number of application servers in the configuration.

If any of the web-application servers go down, a load balancer can help handle the failure through routing requests to alternate web-application servers. The load balancer detects application server failure and redirects requests to another application server. Users can log into the application without experiencing any significant loss of productivity.

## Load Balancing Considerations

- ▶ A load balancer may be used in a distributed installation of the application so that requests from agents and customers are either routed to the least-loaded web servers, or evenly distributed across all the available web servers.

While the application is agnostic to the particular brand of load balancer used in the configuration, it does require that the load balancer is configured to support “sticky sessions” with cookie-based persistence.

## Installing ECE

---

- ▶ Follow the pre-installation tasks ([page 18](#)), installation tasks ([page 40](#)), and post-installation tasks ([page 56](#)), to install ECE.
- ▶ To set up SSL, follow the instructions in the [“SSL Configuration” on page 93](#).

# 2 Pre-Installation Tasks

- ▶ [Disabling Loopback Adapter Configuration](#)
- ▶ [Verifying Network Configuration](#)
- ▶ [Configuring Port Numbers Between Components](#)
- ▶ [Setting Up User Accounts and Permissions](#)
- ▶ [Preparing Database Server Machines](#)
- ▶ [Preparing Web Server Machines](#)
- ▶ [Configuring Virus Scanners](#)
- ▶ [Verifying Unified CCE Configuration](#)

This chapter describes pre-installation procedures that need to be completed before beginning the installation process. As you need to prepare the installation environment in advance, read this installation guide and the following documents before planning and implementing the installation:

- ▶ *System Requirements for Enterprise Chat and Email*
- ▶ *Enterprise Chat and Email Design Guide*

## Disabling Loopback Adapter Configuration

---

ECE cannot be installed on machines where Microsoft Loopback Adapter is configured. Before you proceed with the installation, disable Loopback Adapter configuration on all machines in the deployment.

Skip this section if the machines in the configuration do not use the Loopback Adapter.

### To disable Loopback Adapter:

1. Go to **Start > Control Panel**.
2. In the Control Panel window, click **Hardware**.
3. In the Devices and Printers section, click the **Device Manager** link.
4. In the Device Manager window, go to Network adapters and locate Microsoft Loopback Adapter.
5. Right-click Microsoft Loopback Adapter and select **Disable**.

## Verifying Network Configuration

---

These tasks must be completed in all configurations in which components are installed on more than one physical machine.

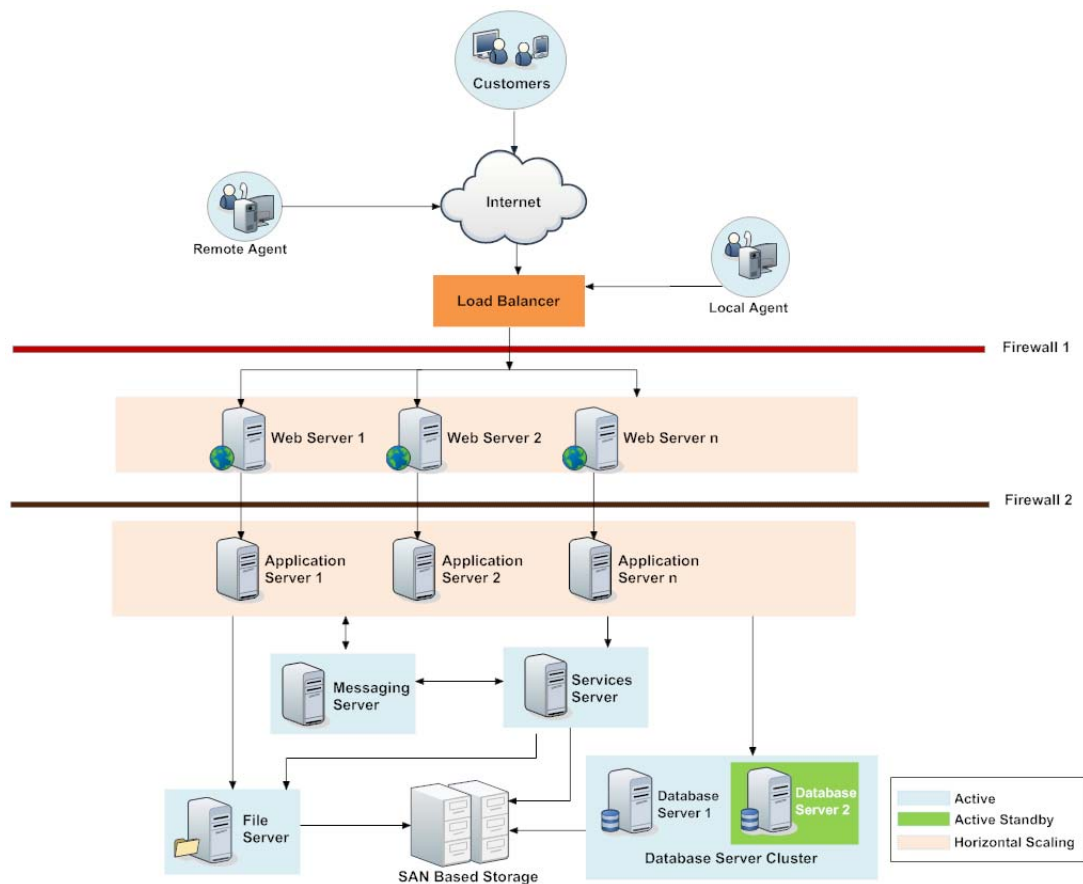
### To verify network configuration:

1. Ensure that all the machines are either assigned static IP addresses, or in cases where the IP address is assigned dynamically, are set to renew the same IP address upon lease expiration.
2. Ensure that all machines other than the web servers, are in the same Active Directory domain. The web servers do not need to be installed in the same domain as other Enterprise Chat and Email components. They can be located anywhere, for example, in a DMZ. Note that the application cannot be installed in a workgroup.
3. Ensure that all the required inbound and outbound ports that need to be opened for the flow of requests between the various components have been opened before you begin the installation. For details, see the [“Configuring Port Numbers Between Components” on page 20](#).
4. For messaging, application, and services servers the `nslookup` of the IP addresses should map to the fully qualified domain names of the servers. Similarly, the `nslookup` of the fully qualified domain names should map to the IP addresses of those servers.
5. Ensure that all the machines are in the same LAN.

6. Ensure that the system clocks of all the machines are synchronized.
7. Ensure that all the servers, except the web server, are able to communicate with the database server at the time of installation.

## Configuring Port Numbers Between Components

This section describes the ports that need to be opened for the flow of requests between the various components. The following diagram shows the ECE system architecture. This will help you understand the communication between the different components.



*System architecture*

The following table lists the inbound and outbound ports that need to be opened. The default port numbers are listed here. Ports that can be modified at the time of installation, or by editing property files are identified with an asterisk (\*).

| From Server            | To Server                               | Default Destination Ports and Protocols                                                                                                                                                 |
|------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Agent Workstation      | Web Server                              | <ul style="list-style-type: none"> <li>▶ 80 [Protocol: HTTP]</li> <li>▶ 443 [Protocol: HTTPS]</li> </ul>                                                                                |
| Finesse Server         | Web Server                              | <ul style="list-style-type: none"> <li>▶ 80 [Protocol: HTTP]</li> <li>▶ 443 [Protocol: HTTPS]</li> </ul>                                                                                |
| Application Server     | Services Server                         | <ul style="list-style-type: none"> <li>▶ 15099 (RMI Registry port) [Protocol: RMI]*</li> <li>▶ 49152 – 65535 (Dynamic port range used by RMI server objects) [Protocol: TCP]</li> </ul> |
| Application Server     | File Server                             | 139 or 445 [Protocol: NETBIOS - TCP]                                                                                                                                                    |
| Application Server     | Database Server                         | 1433 [Protocol: TCP] *                                                                                                                                                                  |
| Application Server     | Messaging Server                        | 5445, 9001 [Protocol: TCP] *                                                                                                                                                            |
| Application Server     | SMTP Server                             | 25 [Protocol: SMTP]                                                                                                                                                                     |
| Application Server     | SMTP or ESMTP Server (with SSL enabled) | 587 [Protocol: SMTP or ESMTP]                                                                                                                                                           |
| Application Server     | IMAP Server                             | 143 [Protocol: IMAP]                                                                                                                                                                    |
| Application Server     | IMAP Server (with SSL enabled)          | 993 [Protocol: IMAP]                                                                                                                                                                    |
| Web Server             | Application Server                      | 15006 [Protocol: TCP] *                                                                                                                                                                 |
| Messaging Server       | File Server                             | 139 or 445 [Protocol: NETBIOS - TCP]                                                                                                                                                    |
| Services Server        | File Server                             | 139 or 445 [Protocol: NETBIOS - TCP]                                                                                                                                                    |
| Services Server        | Database Server                         | 1433 [Protocol: TCP] *                                                                                                                                                                  |
| Services Server        | Messaging Server                        | 9001 [Protocol: TCP] *                                                                                                                                                                  |
| Services Server        | Application Server                      | 9001 [Protocol: TCP] *                                                                                                                                                                  |
| Services Server        | SMTP or ESMTP Server                    | 25 [Protocol: SMTP or ESMTP]                                                                                                                                                            |
| Services Server        | SMTP or ESMTP Server (with SSL enabled) | 587 [Protocol: SMTP or ESMTP]                                                                                                                                                           |
| Services Server        | POP3 Server                             | 110 [Protocol: POP3]                                                                                                                                                                    |
| Services Server        | POP3 Server (with SSL enabled)          | 995 [Protocol: POP3]                                                                                                                                                                    |
| Services Server        | IMAP Server                             | 143 [Protocol: IMAP]                                                                                                                                                                    |
| Services Server        | IMAP Server (with SSL enabled)          | 993 [Protocol: IMAP]                                                                                                                                                                    |
| Active Database Server | File Sever                              | Not applicable                                                                                                                                                                          |

| From Server             | To Server                                   | Default Destination Ports and Protocols                                                                                                                                                                                    |
|-------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Active Database Server  | Archive Database Server                     | <ul style="list-style-type: none"> <li>▶ 1433 [Protocol: TCP]*</li> <li>▶ 135 [Port for Remote Procedure Call (RPC)]</li> <li>▶ 5000-5020 (Port range for RPC ports required for MSDTC to work across firewall)</li> </ul> |
| Reports Database Server | Active Database Server                      | <ul style="list-style-type: none"> <li>▶ 1433 [Protocol: TCP]*</li> <li>▶ 135 [Port for Remote Procedure Call (RPC)]</li> <li>▶ 5000-5020 (Port range for RPC ports required for MSDTC to work across firewall)</li> </ul> |
| Services Server         | Primary CTI Server                          | 42027*                                                                                                                                                                                                                     |
| Services Server         | Secondary CTI Server                        | 42028*                                                                                                                                                                                                                     |
| Services Server         | Media Routing Peripheral Gateway            | 38002*                                                                                                                                                                                                                     |
| Services Server         | Primary Administration Workstation Database | 1433 [Protocol: TCP]*                                                                                                                                                                                                      |
| Application Server      | Primary Administration Workstation Database | 1433 [Protocol: TCP]*                                                                                                                                                                                                      |

## Setting Up User Accounts and Permissions

You will need administrator privileges on the local system to perform the installation and run the ECE services after installing the application.



**Important:** You must use the same domain account to install the software environment and ECE. This account is also used to run the ECE services after installing the application ([page 59](#)).

## Setting Up Domain Account

- ▶ Request your IT department to create a domain user account, for example, *InstallTeam* for exclusive use by ECE. The domain user account needs the **Log on as a Service** and **Local Administrator** privileges on each of the servers used in the deployment.

You will use this account to install and configure the software environment as well as ECE. This account is also used to run the ECE services after installing the application.

- ▶ If you do not want the same domain accounts to be used for running SQL services and the ECE application, you can optionally create an additional domain account for the database servers, for example, *SQLSERVICEUSER*. This account is used for running the SQL server services.



**Caution:** The recommendation is that you do not change the password of the domain account after the application is installed. If you must change it, make sure that you update the IIS directory security settings on web servers, and the login information for all Windows and MSSQL services that use that domain account.

# Configuring Permissions on Active Directory Server

If you are using Windows authentication database connectivity, *or* the configuration includes more than one database server machines, perform these additional tasks on the Active Directory server. You will need administrator privileges to complete these tasks. Contact your IT administrator for assistance if required.

## To configure permissions:

1. Go to **Start > Run > Command** to launch the command window and run the following command. This sets the Service Principal Names (SPN) to the domain account for MSSQL service on the database servers.

```
setspn -A MSSQLSvc/HOST:PORT accountname
```

```
setspn -A MSSQLSvc/HOST:instancename accountname
```

Run this command for both short and fully qualified host names for all database servers. For example, if there are two database servers, `tempv20w5` and `tempv20w6`, with instance name as `MSSQLSERVER` and port as `1433`, with the user account `InstallTeam` in the `domain1` domain, then run the following commands. If your MSOL Services are running with a different domain account, for example, `SQLSERVICEUSER` in the `domain1` domain, then use the `SQLSERVICEUSER` account to run these commands.

```
setspn -A MSSQLSvc/tempv20w5.company.na:1433 domain1\InstallTeam
```

```
setspn -A MSSQLSvc/tempv20w5.company.na:MSSQLSERVER domain1\InstallTeam
```

```
setspn -A MSSQLSvc/tempv20w5:1433 domain1\InstallTeam
```

```
setspn -A MSSQLSvc/tempv20w5:MSSQLSERVER domain1\InstallTeam
```

```
setspn -A MSSQLSvc/tempv20w6.company.na:1433 domain1\InstallTeam
```

```
setspn -A MSSQLSvc/tempv20w6.company.na:MSSQLSERVER domain1\InstallTeam
```

```
setspn -A MSSQLSvc/tempv20w6:1433 domain1\InstallTeam
```

```
setspn -A MSSQLSvc/tempv20w6:MSSQLSERVER domain1\InstallTeam
```

2. Go to **Start > Control Panel > Administrative Tools > Active Directory Users and Computers**.
3. Navigate to the domain user account used for MSSQL service on the database servers. Right-click and select **Properties**.
  - a. In the Properties window, click the Account tab. Ensure that the following options are *not* selected:
    - **Account is sensitive and cannot be delegated.**
    - **Do not require Kerberos preauthentication.**

**LRunner Properties**

Organization | Member Of | Dial-in | Environment | Sessions  
 Remote control | Terminal Services Profile | CDM+  
 General | Address | Account | Profile | Telephones | Delegation

User logon name:  
 LRunner @egain.na

User logon name (pre-Windows 2000):  
 EGAIN\LRunner

Logon Hours... Log On To...

☐ Account is locked out

Account options:

- ☐ Smart card is required for interactive logon
- ☐ Account is sensitive and cannot be delegated
- ☐ Use DES encryption types for this account
- ☐ Do not require Kerberos preauthentication

Account expires:  
☒ Never  
☐ End of: Wednesday, January 19, 2011

OK Cancel Apply

*Set account properties for domain user account*

- b. Click the Delegation tab. Ensure that the domain user account is trusted for delegation.

**LRunner Properties**

Organization | Member Of | Dial-in | Environment | Sessions  
 Remote control | Terminal Services Profile | CDM+  
 General | Address | Account | Profile | Telephones | Delegation

Delegation is a security-sensitive operation, which allows services to act on behalf of another user.

☒ Do not trust this user for delegation  
☐ Trust this user for delegation to any service (Kerberos only)  
☐ Trust this user for delegation to specified services only

☒ Use Kerberos only  
☐ Use any authentication protocol

Services to which this account can present delegated credentials:

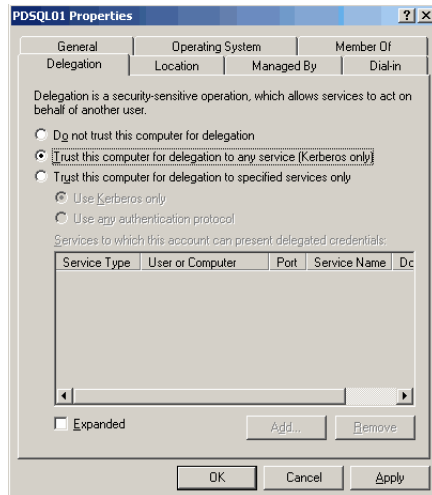
| Service Type | User or Computer | Port | Service Name | Domain |
|--------------|------------------|------|--------------|--------|
|--------------|------------------|------|--------------|--------|

Expanded Add... Remove

OK Cancel Apply

*Set delegation properties for domain user account*

4. In the **Active Directory Users and Computers** tree, navigate to the database server. Ensure that it is trusted for delegation. Repeat this step for each database server.



*Set delegation properties for database server*

## Preparing Database Server Machines

### Creating a New Drive for Partitioned File Groups

This section applies only to installations using MSSQL Enterprise Edition.

- It is recommended that you store the data files for the database partition groups on a separate drive than the drive where the ECE databases are installed. Create a new vDisk manually for this. For sizing of this drive, see the “Planning for Database Growth” section of the *Enterprise Chat and Email Design Guide*.

### Verifying Microsoft SQL Server Features

- Ensure that the following Microsoft SQL Server features are installed.
  - Instance Feature:
    - Database Engine Services > Full Text and Semantic Extraction for Search
  - Shared Features
    - Client Tools Connectivity
    - Integration Services
    - Client Tools SDK
    - Management Tools - Basic > Management Tools - Advanced
    - SQL Client Connectivity SDK

## Verifying Collation Settings

- ▶ Collation settings are typically chosen while installing SQL Server 2014. Since collations specify the rules for how strings of character data are sorted and compared, based on particular languages, a particular type of collation is required for the application to process and present information accurately.

On the Collation settings screen, choose SQL Collations and select the following option: **Dictionary order, case-insensitive, for use with 1252 Character Set**. For example, `SQL_Latin1_General_CP1_CI_AS`. Although this is the recommended collation, it is not mandatory. Any ASCII, case insensitive collation can be used. If you have already installed SQL Server 2014, consult your DBA and verify that the collation setting chosen is ASCII (case insensitive). The application databases will be installed using the collation that is configured for MSSQL Server.

## Creating SQL User for Installing ECE Databases

Skip this section if you want to use the default `SA` user to install the ECE databases.

- ▶ Create a user for installing the ECE databases and make sure the following roles are assigned to the user: `dbcreator`, `securityadmin`, `sysadmin`

## Assigning Permissions to Domain User

- ▶ Give `sysadmin` permission to the domain account created for installing and running the application. If you have created a separate account for the database services, then assign the permission to that user ([page 22](#)).

## Configuring Database Servers

Skip this section if the archive or reports database is on the same machine as the active and master databases. If any database is on a different machine, consult your administrator and verify that:

- All database server machines used in the configuration are in the same domain as all the other Enterprise Chat and Email servers.
- All databases are to be either on named instances or on default instances. For example, if you are using the default instance for the active and master databases, then use the default instance for the other databases as well.
- If you are using Windows authentication, also ensure that the steps outlined in the following section have been completed: “[Configuring Permissions on Active Directory Server](#)” on [page 23](#). After you have completed these tasks, you should be able to run a linked server query on each database from a third machine acting as a SQL client.
- Enable mixed-mode authentication if you plan to use SQL authentication for database connectivity.

## Configuring Microsoft DTC Settings

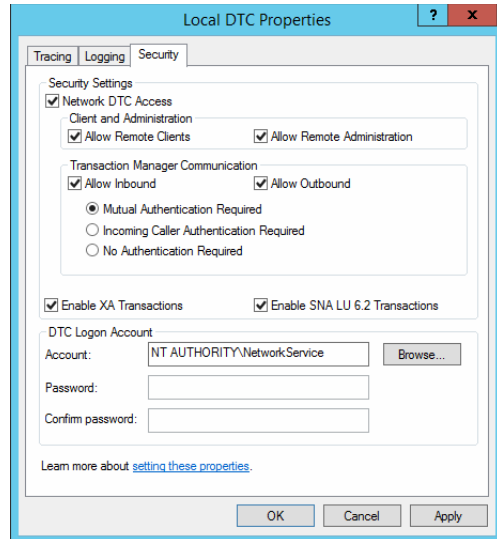
The Microsoft Distributed Transaction Coordinator (DTC) service, a component of Microsoft Windows, is responsible for coordinating transactions that span multiple resources like databases. MSDTC settings must be configured on all the database servers in a configuration.

Enable network DTC access on each database server machine.

**To enable network DTC access:**

1. Go to **Start > Control Panel > Administrative Tools > Component Services**.
2. In the console tree, browse **Component Services > Computers > My Computer > Distributed Transaction Coordinator > Local DTC**.
3. Right-click **Local DTC** and from the menu select **Properties**.
4. In the Local DTC Properties window, go to the Security tab and set the following:
  - a. In the Security Settings section, select the following two options:
    - **Network DTC Access**
    - **Enable XA Transactions**
  - b. Within the Network DTC Access section, select the following four options:
    - **Allow Remote Clients**
    - **Allow Remote Administration**
    - **Transaction Manager Communication - Allow Inbound**
    - **Transaction Manager Communication - Allow Outbound**
  - c. In the DTC Logon Account section, set the value in the **Account** field to **NT Authority\NetworkService**.

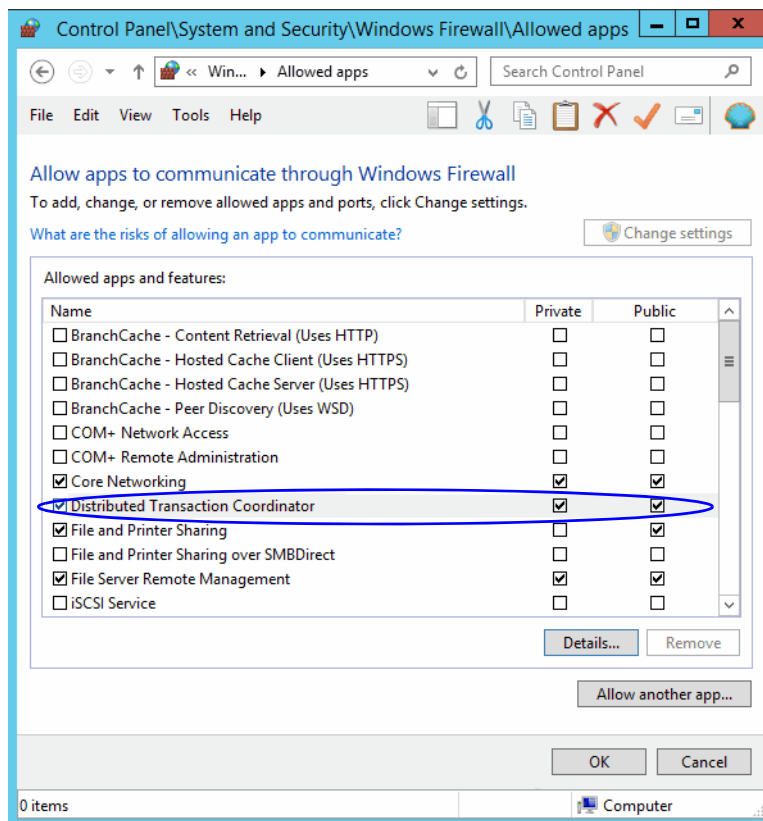
Click **OK**.



*Enable network DTC settings*

5. In the DTC Console Message box, click **Yes**.
6. Restart the machine.
7. Go to **Start > All Programs > Administrative Tools > Services**.
8. In the Services window, locate the following two services and stop them.
  - **Distributed Transaction Coordinator**

- **SQL Server (MSSQLSERVER)** for Microsoft SQL 2014.
- 9. Now, start the two services in the following order:
  - a. **Distributed Transaction Coordinator**
  - b. **SQL Server (MSSQLSERVER)** for Microsoft SQL 2014.
- 10. Next, go to **Start > All Programs > Control Panel**.
- 11. Open Windows Firewall, and in the Windows Firewall window, click the **Allow an app or feature through Windows Firewall** link.
- 12. In the Allowed Programs window, click the **Change Settings** link and select the **Distributed Transaction Coordinator** option. Click **OK**.



Select the Distributed Transaction Coordinator option

## Configuring SQL Server Integration Service on the Reports Database



**Important:** This task is required only in deployments that use the Enterprise Edition of MS SQL Server.

There are six parts to completing this task:

1. First, install the SQL Server Integration service on the reports database server machine (page 29).
2. Then, create the SSISDB catalog (page 29).
3. Next, configure the recovery model for SSISDB (page 30).

4. Next, assign specific permissions to the domain user running the installer to allow them to make updates to this catalog and the schema ([page 31](#)).
5. Verify **Replace a process-level token** privilege has been enabled for the server ([page 34](#)).
6. Finally, create a folder on the machine where all data files that will be created by the application ([page 34](#)).

## Installing SQL Server Integration Service

- Install the SQL Server Integration Service on the reports database server machine. To install and configure the SQL Server Integration Service, follow the instructions in the Microsoft SQL Server 2014 documentation. For details, go to <http://msdn.microsoft.com> and search for SQL Server Integration Service.

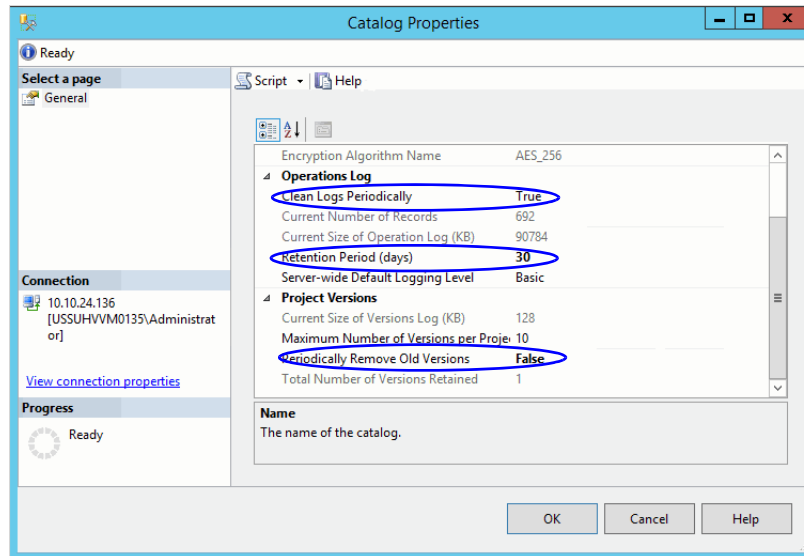
## Creating Integration Services Catalog

Before you begin, ensure that the SSIS component is installed on the database server machine where the reports database installation is planned.

### To create the Integration Services Catalog:

1. From SQL Server Management Studio, log into the reports database server with the domain user that you are going to use to install the application ([page 22](#)).
2. Locate the **Integration Services Catalogs** node in the Tree pane and use the context menu to create catalog.  
While creating the catalog, ensure that the **Enable CLR Integration** and **Enable automatic execution of Integration Services stored procedure at SQL Server startup** options are selected.
3. After the catalog is created, you should see it when you expand the SSISDB in the **Integration Services Catalogs** node.
4. Right-click SSISDB and from the context menu, select **Properties**, and configure the following properties:
  - **Clean Logs Periodically:** Set this value to **True**.
  - **Retention Period (days):** Set this value as **30** days.

- **Periodically Remove Old Versions:** Set this value to **False**.



*Configure SSIS properties*

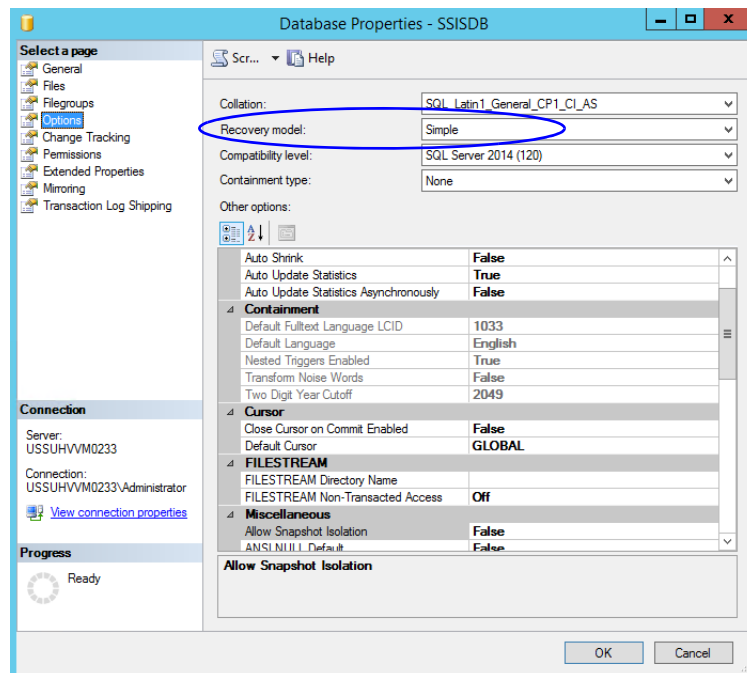
## Configuring Recovery Model for SSIS Database

Change the recovery model for the SSIS database to Simple.

### To configure the recovery model for SSIS database:

1. From SQL Server Management Studio, log into the reports database server.
2. Browse to **Databases > SSISDB**.
3. Right-click SSISDB and from the context menu, select **Properties**.

4. In the Database Properties window, go to the Options section and change the **Recovery model** to **Simple** and click **OK**.



*Set the recovery model for the database*

## Configuring Permissions for the Domain User

Ensure that the domain user installing the ECE databases has the required permissions.

### To configure permissions:

1. From SQL Server Management Studio, log into the reports database server as a database administrator.
2. Browse to **Security > Logins > New login** and do the following:

- a. Add the domain login (page 22) and set the default database as `SSISDB`. You need to perform this task if your domain account is not already mapped to the SQL login.

The screenshot shows the 'Login - New' dialog box. The 'Login name' field contains 'USPMHOST1W15\Administrator'. Under 'Authentication', 'Windows authentication' is selected. The 'Default database' dropdown is set to 'SSISDB' and is circled in blue. The 'Default language' is set to '<default>'. The 'Connection' section shows 'Server: USPMHOST1W15' and 'Connection: USPMHOST1W15\Administrator'. The 'Progress' section shows 'Ready'.

*Add the new domain user*

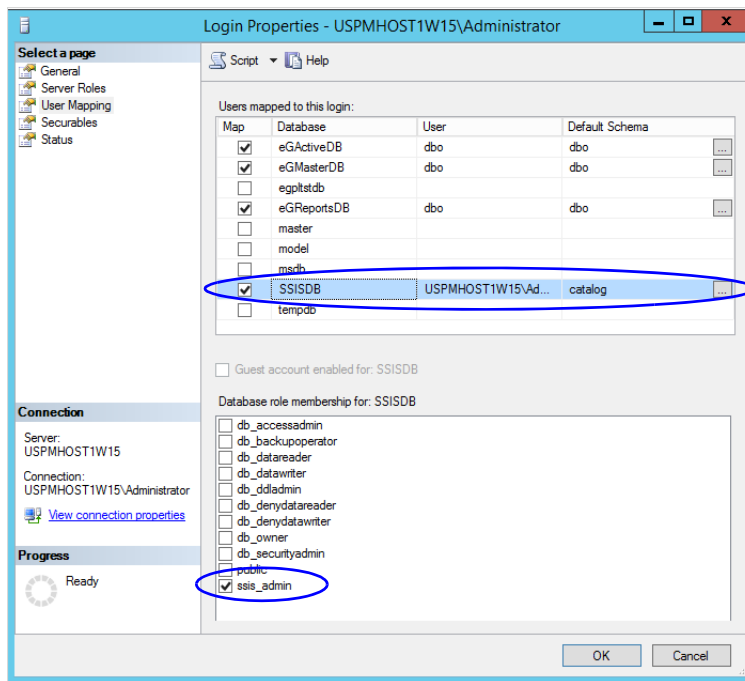
- b. From the Server Roles section, assign the following server roles:

- `public`
- `bulkadmin`

The screenshot shows the 'Login Properties - USPMHOST1W15\Administrator' dialog box. The 'Server roles' section is expanded, and 'bulkadmin' and 'public' are checked, circled in blue. The 'Connection' section shows 'Server: USPMHOST1W15' and 'Connection: USPMHOST1W15\Administrator'. The 'Progress' section shows 'Ready'.

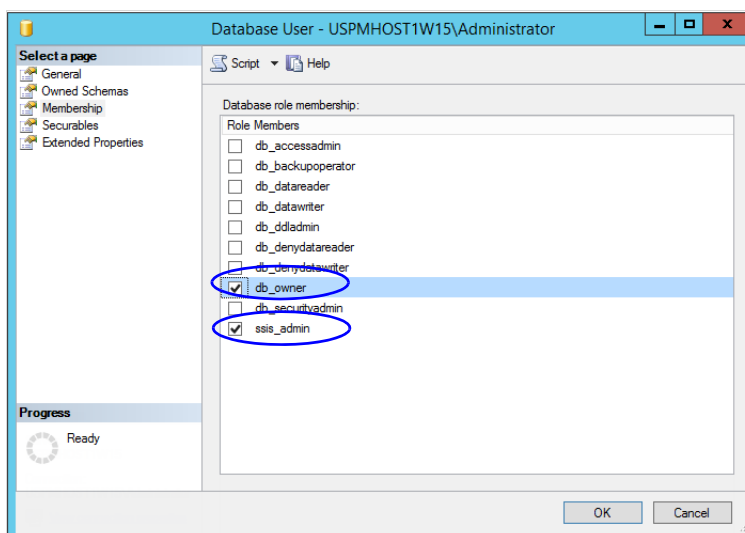
*Set the server roles*

- c. In the User Mapping section, do the following:
  - Select the **Map** option for **SSISDB** select the default schema as **catalog**.
  - In the Database role membership for: SSISDB section assign the **ssis\_admin** role.



*Set user mapping*

3. Now, browse to **Databases > SSISDB > Security > Users**, and do the following:
  - a. Right-click the domain user and select **Properties**.
  - b. In the Database User window, go to the Membership section and select **db\_owner** and **ssis\_admin**. Click **OK**.



*Set membership*

## Verifying Server Privileges

Ensure the “Replace a process level token” privilege is enabled for the **NT Service\MSSQL Server**.

### To verify server privileges:

1. On the database server where the Reports database is to be installed, open the command prompt and run **gpedit.msc**. The Local Group Policy Management Editor opens.
2. Navigate to **Local Computer Policy > Windows Settings > Security Settings > Local Policies > User Right Assignment > Replace a process level token**.
3. From the policy list, double-click **Replace a process level token**.
4. In the window that opens, click the **Add User or Group...** button.
5. Add the **NT\_SERVICE\DB\_Instance\_Name** service account to the privilege.
  - If you are using the default instance name for the reports database, it will be **NT\_SERVICE\MSSQLSERVER**.
  - If the reports database is installed with a named instance, add the service account **NT\_SERVICE\MSSQLDB\_Instance\_Name**.
6. To apply your changes, restart the reports database server. If the privileges were already enabled on the service account, a reboot is not necessary.

## Creating Directory for Data Files

- ▶ Create a directory on the reports server machine, for example, *D:\ssis\_data* and ensure that the domain user has **write** and **modify** permissions on this folder.

## Running SQL Server Services

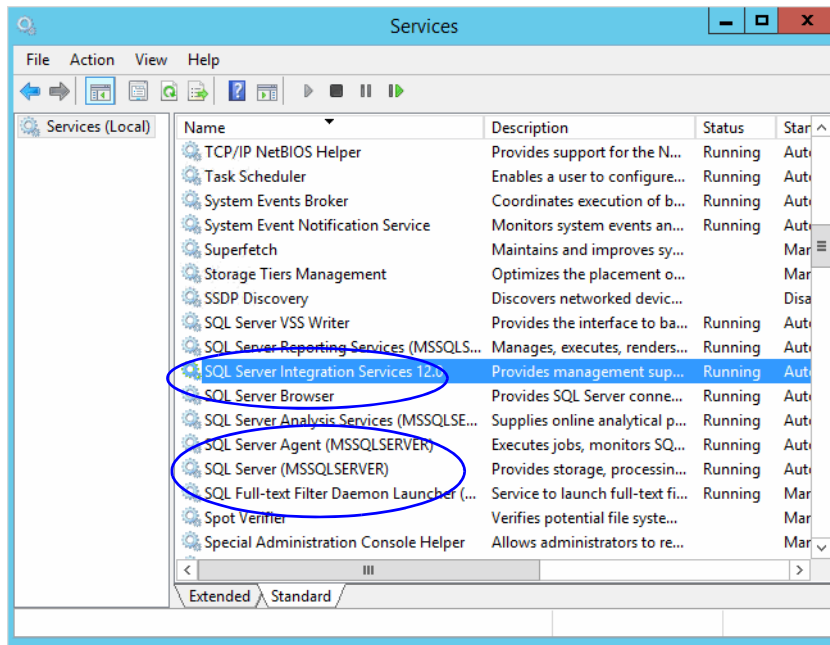
Make sure the following SQL services are running. These services should be started using the same domain account that you have created for installing the ECE application. If your MS SQL Services are running with a different domain account, then use that account. ([page 22](#)).

- ▶ **SQL Server Service**
- ▶ **SQL Full-text Filter Daemon Launcher Service:** This service is required for text searches.
- ▶ **SQL Server Agent Service:** This service is used by the Reports module.
- ▶ **SQL Server Integration Service:** This service is used by the Reports module.
- ▶ **SQL Server Browser Service:** In configurations where database servers are configured to run on named instances, and no listener port is configured, the SQL Server Browser service needs to be running when you run the installer. This service does not have to be running if the database servers are configured to run on the default instance. It is also not required if the database servers are configured to run on named instances, and specific, static listener ports are configured for the named instances.

### To start the services:

1. Go to **Start > Programs > Administrative Tools > Services**.

2. For the SQL Full-text Filter Daemon Launcher, SQL Server Agent, SQL Server, and SQL Server Browser services check if the right domain account is used for starting the services.
  - a. Select a service and right-click to open the menu.
  - b. From the menu select **Properties**.
  - c. In the Properties window, go to Log On tab and ensure the service is started using the same domain account that you have created for installing the ECE application ([page 22](#)).
3. Ensure that the SQL Full-text Filter Daemon Launcher, SQL Server Agent, SQL Server, SQL Server Integration Service, and SQL Server Browser services are running.
4. If they are not running, select the services one by one, and click **Start** to start the service.



*Start the SQL services*

## Preparing Web Server Machines

### Configuring Roles and Features

This task is performed automatically by the installation program. You can choose to do it manually before running the installation program.

Ensure that the following Roles and Features are installed for IIS.

- ▶ NET Extensibility 4.5
- ▶ ASP
- ▶ CGI
- ▶ ISAPI Extensions

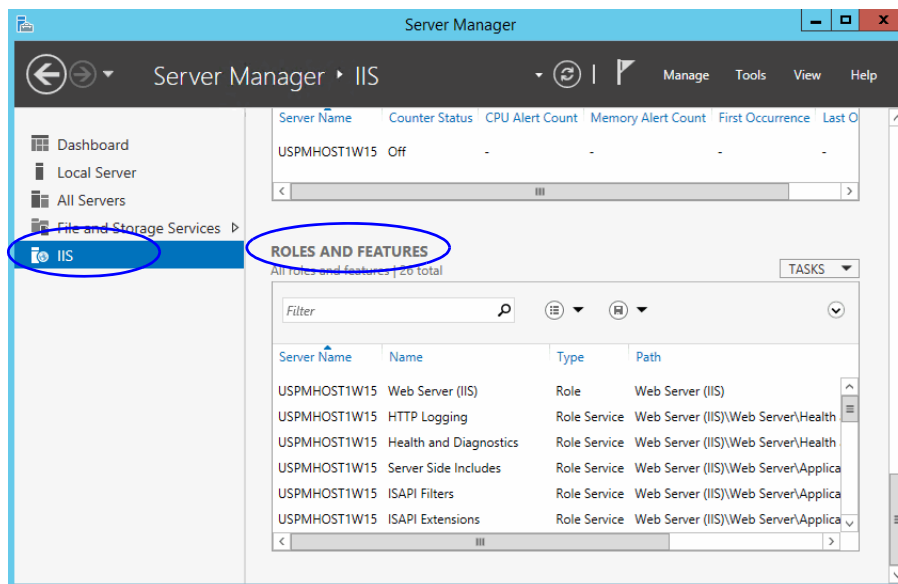
- ▶ ISAPI Filters
- ▶ Server Side Includes
- ▶ Static Content
- ▶ Static Content Compression
- ▶ Dynamic Content Compression
- ▶ Directory Browsing
- ▶ Default Document

Ensure that the following feature is *not* installed for IIS.

- ▶ WebDAV Publishing

### To install the roles and features:

1. Go to **Start > Control Panel > Administrative Tools > Server Manager**.
2. In the Server Manager window, Go to IIS section. In the IIS section, locate the Roles and Features section.



*Go to Roles and Features section*

3. In the Role and Features section, check if the required role services are installed.
4. If any of the roles and features are not installed, from the Tasks menu, click the **Add Roles and Features** button and run through the wizard to install the missing services. In the Server Roles section, expand the **Web Server (IIS)** list, and select the following:
  - In the Common HTTP Features list, select:
    - Default Document
    - Directory Browsing
    - Static Content
  - In the Performance list, select:
    - Static Content Compression

- Dynamic Content Compression
- In the Application Development list, select:
  - NET Extensibility 4.5
  - ASP
  - CGI
  - ISAPI Extensions
  - ISAPI Filters
  - Server Side Includes
- 5. In the Role and Features section, check if the **WebDAV Publishing** feature is installed. If the feature is installed, you need to uninstall it. From the Tasks menu, click the **Remove Roles and Features** button and run through the wizard to uninstall the feature.

## Installing IIS Rewrite Module on Web Servers

This task is performed automatically by the installation program. You can choose to do it manually before running the installation program.

- ▶ The IIS rewrite module is required to be installed on the web server. Install the module using the installation program available in the `Environment\Web Server\URL Rewrite` folder of the installation package.

## Configuring Permissions on IIS Config Folder

- ▶ Ensure that the user account you are going to use for installing the application ([page 22](#)) has read permissions on the following folder: `%systemroot%\system32\inetsrv\config`

## Running the World Wide Web Publishing Service

- ▶ On all machines where the web server is to be installed, ensure that the World Wide Web Publishing Service is running.

## Configuring Virus Scanners

---

### Configuring SMTP Port in Virus Scanners

- ▶ Ensure that the virus scanner is configured to allow emails to be sent through the SMTP port (Port 25). In a distributed installation, configure this setting on the services server and all application servers.

## Configuring Virus Scanning Exclusions

To ensure that virus and malware scanning software on the servers do not interfere with the performance of the application, certain folders and files must be excluded from continuous virus scanning. Since no files are downloaded to these locations from the internet, it is safe to exclude these directories from virus scanning.

### On the File, Messaging, Services, Application, and Web Servers

Follow the instructions for your virus scanning software to exclude the following folders and file types.

| Item                    | Exclude Subfolders?              | Execute permissions |
|-------------------------|----------------------------------|---------------------|
| Windows File Protection | --                               | Read, Write         |
| All files of type LOG   | --                               | Read, Write         |
| Pagefile.sys            | No                               | Read, Write         |
| <i>Drive\ECE_Home\</i>  | Yes [other than <b>Storage</b> ] | Read, Write         |
| *.rll                   | No                               | Read, Write         |

### On the Database Servers

Follow the instructions for your virus scanning software to exclude the following folders and file types.

| Item                                | Exclude Subfolders? | Permissions |
|-------------------------------------|---------------------|-------------|
| Windows File Protection             | --                  | Read, Write |
| All files of type LOG, if any       | --                  | Read, Write |
| Pagefile.sys                        | No                  | Read, Write |
| <i>Drive:\Path_to_datafile</i>      | Yes                 | Read, Write |
| <i>Drive:\Path_to_SSIS_datafile</i> | Yes                 | Read, Write |
| *.mdf                               | No                  | Read, Write |
| *.ldf                               | No                  | Read, Write |
| *.ndf                               | No                  | Read, Write |
| *.dat                               | No                  | Read, Write |
| *.rll                               | No                  | Read, Write |

## Verifying Unified CCE Configuration

- Verify that Unified CCE and Microsoft Active Directory (AD) have been installed on separate servers. Refer to Unified CCE documentation for more details.

- ▶ Verify that the Unified CCE and AD servers are in the same network as the ECE servers and are accessible from the ECE servers.
- ▶ Verify that the items to be used in ECE are configured in Unified CCE. These include:
  - Peripherals
  - Application Instance
  - Media Classes
  - Media Routing Domains (MRDs)
  - Network Voice Response Units (Network VRUs)
  - Call Type
  - Media Routing Peripheral Gateways (MR PGs)
  - Script Selector
  - Agent Peripheral Gateway (Agent PG)
  - Network Trunk Groups
  - Network Trunks
  - Application Paths and Path Members
  - Agents
  - Skill Groups
  - ICM Scripts
  - Expanded Call Context (ECC) Variables
  - CTI Gateways (CG)

For details, see *Enterprise Chat and Email Deployment and Maintenance Guide*.

# 3 Installation Process

- ▶ [Installation Overview](#)
- ▶ [Installing ECE](#)
- ▶ [Installation Details](#)

This chapter provides an overview of how to install the application. Before beginning the installation, ensure that you have complied with all the prerequisites listed in [“Pre-Installation Tasks” on page 18](#).

## Installation Overview

---

You can do a collocated deployment, where all components, except for the web server, are installed on the same machine and the web server is installed on a separate machine. The web server may be installed outside the firewall, if required. Or, you can do a distributed-server installation, where each component is installed on a separate machine.

When each component is on a different machine, the installation program is run on each server separately. Make sure you install the file server first, followed by the database server. Since the database is installed remotely, you can install both the file server and the database components at the same time. The program will ask you for the details of the database server as you work through the installation.

If you are installing two components, for example, application and web server components, on the same machine, make sure that you install both application server and web server at the same time. The installation program can only be run once per server.

The valid sequence for running the installation program is:

1. File server + database server
2. Messaging server
3. Application server
4. Web Server
5. Services server

If you plan to have multiple application and web servers, run the installer on all the machines where these components need to be installed.

## Installing ECE

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This section talks about installing the application in graphical mode. In a distributed-server installation, repeat these tasks on all machines in your configuration.

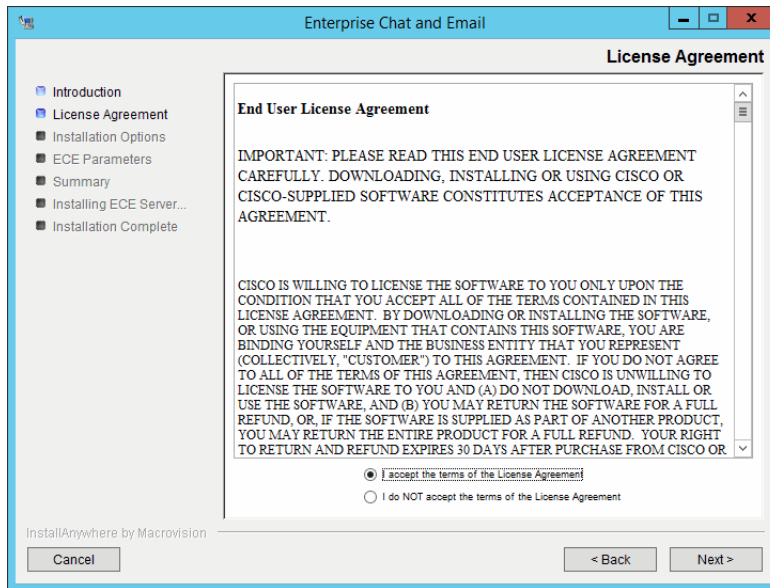
### To install ECE:

1. Start the installation by using the physical installation media or a mounted ISO file. Run `setup_wsjb.exe` to launch the installation program.

Alternatively, you can create a temporary directory on any drive on your server. For example, *C:\Temp*. Copy the contents of the installation package to the *Temp* folder on your local machine where you are running the installer. Run `setup_wsjb.exe` from the *C:\Temp\Application* directory.

2. When the Introduction window appears, read the installation instructions. Click **Next**.

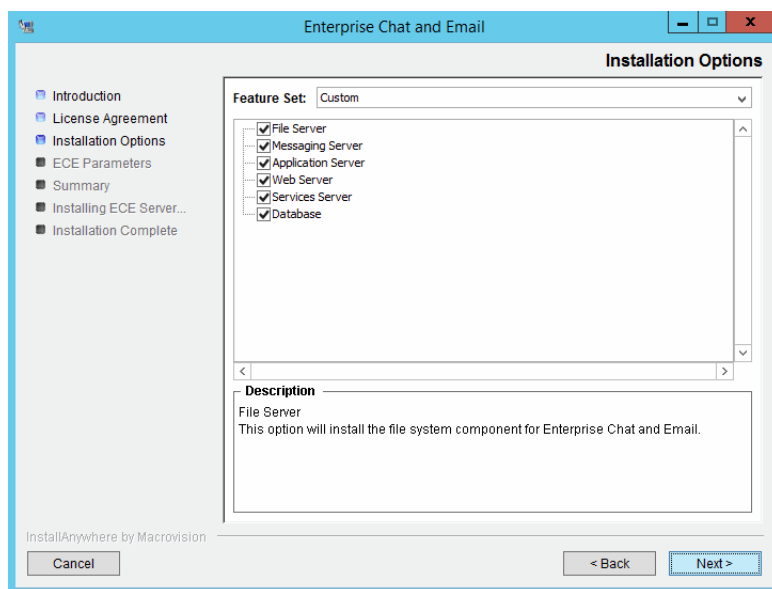
3. In the License Agreement window, review the licensing terms and select the **I accept the terms of the License Agreement** option. Click **Next**.



*Read and accept the terms of the License Agreement*

4. In the Installation Options window, select from the following components. Make sure you select all the components you wish to install. For details, see [“Installation Overview” on page 41](#).
- ☐ **File Server**
  - ☐ **Messaging Server**
  - ☐ **Application Server**
  - ☐ **Web Server**
  - ☐ **Services Server**
  - ☐ **Database**

Click **Next**.



*Select installation options*

Based on the components you choose to install, you will see a different set of screens. The installation program for ECE has on-screen help that describes the information that needs to be provided for each screen. If you need to refer to the fields that each screen displays, see the following sections.

- [File Server Details on page 44](#)
- [Database Server Details on page 45](#)
- [Web Server Details on page 52](#)
- [Messaging Server Details on page 53](#)
- [Application Server Details on page 53](#)
- [Services Server Details on page 55](#)

5. Review the information displayed in the Summary window, and click **Install**.
6. In the Install Complete window, click the **Finish** button to complete the installation process.

A summary of the installation is saved in

`Cisco_Home\eService\installation\logs\installation_summary_Server_Name.txt`.

After the installation is completed, perform the post-installation tasks ([page 56](#)).

# Installation Details

## File Server Details

| #                                               | Graphic Installation           | Description                                                                                                                                                                                                                                                                                                                          | Value |
|-------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| <b>Enterprise Chat and Email Home Directory</b> |                                |                                                                                                                                                                                                                                                                                                                                      |       |
| 1.                                              | File Server Directory/NAS path | Provide the path of the directory where you would like to install Enterprise Chat and Email. For example, C:\C i s c o, or \\S h a r e d S p a c e \C i s c o, if the file server is installed on a NAS device.<br><b>Note:</b> Make sure that the path and folder name do not contain any of the following characters: *?<> +^"%',@ |       |
| <b>Domain User Account Parameters</b>           |                                |                                                                                                                                                                                                                                                                                                                                      |       |
| 2.                                              | Domain user name               | User name of the domain user account created for use by the application. For more information, refer to <a href="#">“Setting Up User Accounts and Permissions”</a> on page 22.                                                                                                                                                       |       |
| 3.                                              | Domain user password           | Password for the domain user.                                                                                                                                                                                                                                                                                                        |       |

*File server details*

# Database Server Details

| #                                                                  | Graphic Installation      | Description                                                                                                                                                                                                                                                                                                                               | Value   |
|--------------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>File Sever Parameters</b>                                       |                           |                                                                                                                                                                                                                                                                                                                                           |         |
| 1.                                                                 | File Server Name/NAS Path | The fully qualified domain name of the file server. If the file server is installed on a NAS device, provide the path to the shared folder on the NAS device. For example, \\SharedSpace\Cisco.<br><b>Note:</b> Make sure you provide the DNS host name and not the IP address of the server.                                             |         |
| <b>Cisco Application Context Root</b>                              |                           |                                                                                                                                                                                                                                                                                                                                           |         |
| 2.                                                                 | Context Root Name         | The name used to identify the document root of the Web Server. The context root of a web application determines which URLs are delegated to the web application.<br><b>Note:</b> Make sure there are no spaces or special characters in the name of the context root.                                                                     | system  |
| <b>Cisco System Administrator Account</b>                          |                           |                                                                                                                                                                                                                                                                                                                                           |         |
| 3.                                                                 | User name                 | User name for the system administrator. This is the first user that gets created for accessing the system partition.                                                                                                                                                                                                                      | sa      |
| 4.                                                                 | Password                  | Password for the system administrator.<br><b>Note:</b> The password should have at least eight characters and should be a mix of numbers and letters. For example, password@123.<br>Do not use the following characters in the password:<br>< (less than), > (greater than), ; (semi colon), : (colon), = (equal to), \ (back slash)      |         |
| <b>Cisco Partition Administrator Account and Partition Details</b> |                           |                                                                                                                                                                                                                                                                                                                                           |         |
| 5.                                                                 | User name                 | User name for the partition administrator. This is the first user that gets created for accessing the business partition.                                                                                                                                                                                                                 | pa      |
| 6.                                                                 | Password                  | Password for the partition administrator.<br><b>Note:</b> The password should have at least eight characters and should be a mix of numbers and alphabets. For example, password@123.<br>Do not use the following characters in the password:<br>< (less than), > (greater than), ; (semi colon), : (colon), = (equal to), \ (back slash) |         |
| 7.                                                                 | Partition name            | Name for the business partition. Make sure that the name does not contain any spaces or special characters. Also, the partition name should be different than the context root name.                                                                                                                                                      | default |
| 8.                                                                 | Description of partition  | Description for the partition.                                                                                                                                                                                                                                                                                                            |         |
| <b>Installation Identifiers</b>                                    |                           |                                                                                                                                                                                                                                                                                                                                           |         |

| #                                         | Graphic Installation                       | Description                                                                                                                                                                                                                                                                                                                              | Value        |
|-------------------------------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 9.                                        | Unique name for this installation          | Provide a unique name for this installation. For example: PROD, PRD1, TEST, TST2, or DEMO. The length of the name must be between 1 and 4 characters long. The name must not contain any spaces or special characters.                                                                                                                   |              |
| 10.                                       | 4-digit identifier for this installation   | Provide a 4-digit numerical value, between 2001 and 9998, that will be used internally as system ID.                                                                                                                                                                                                                                     |              |
| <b>Knowledge Base Primary Language</b>    |                                            |                                                                                                                                                                                                                                                                                                                                          |              |
| 11.                                       | Knowledge Base Primary Language            | The default language for the Knowledge Base.                                                                                                                                                                                                                                                                                             | English (US) |
| <b>Default Notification Parameters</b>    |                                            |                                                                                                                                                                                                                                                                                                                                          |              |
| 12.                                       | Default SMTP server                        | The SMTP server to be used to send email notifications.                                                                                                                                                                                                                                                                                  |              |
| 13.                                       | Notification mail redirection from address | All notification emails are sent from this email address.                                                                                                                                                                                                                                                                                |              |
| 14.                                       | Notification mail redirection to address   | All notification emails are sent to this email address.                                                                                                                                                                                                                                                                                  |              |
| <b>SQL Server Database Authentication</b> |                                            |                                                                                                                                                                                                                                                                                                                                          |              |
| 15.                                       | Authentication                             | Authentication type to be used while connecting to the database. Set the value as <b>SQL Server Authentication mode</b> or <b>Windows Authentication mode</b> .<br>If you selected Windows Authentication as the only mode of authentication while installing SQL Server, you must set the value as <b>Windows Authentication mode</b> . |              |
| <b>Master Database Parameters</b>         |                                            |                                                                                                                                                                                                                                                                                                                                          |              |
| 16.                                       | Server name                                | Name of the local or remote server on which you want to install the master database.<br><b>Note:</b> Make sure you provide the DNS host name and not the IP address.                                                                                                                                                                     |              |
| 17.                                       | Database name                              | Name of the master database. The installation program creates a database with the name you provide here.                                                                                                                                                                                                                                 |              |
| 18.                                       | Server instance name                       | Name of the MSSQL Server instance to be used while creating the database. Set this value only if you are using a named instance, and not the default instance.                                                                                                                                                                           |              |
| 19.                                       | Database listener port                     | Port number of the MSSQL Server.                                                                                                                                                                                                                                                                                                         | 1433         |
| 20.                                       | Datafile path                              | Path to the folder on the database server, where you want to create the data file. For example, D:\MSSQL\Data.                                                                                                                                                                                                                           |              |
| 21.                                       | Datafile initial size (MB)                 | Minimum size of the data file for the database.                                                                                                                                                                                                                                                                                          | 100          |
| 22.                                       | Datafile maximum size (MB)                 | Maximum size of the data file for the database.                                                                                                                                                                                                                                                                                          | Unlimited    |

| #                                 | Graphic Installation             | Description                                                                                                                                                                                                                                                                                                                 | Value     |
|-----------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 23.                               | Datafile increment size (MB)     | Additional file size limit that will be allocated to the database after the initial size is full.                                                                                                                                                                                                                           | 10        |
| 24.                               | Logfile initial size (MB)        | Minimum size of the log file.                                                                                                                                                                                                                                                                                               | 25        |
| 25.                               | Logfile maximum size (MB)        | Maximum size of the log file.                                                                                                                                                                                                                                                                                               | Unlimited |
| 26.                               | Database administrator user name | User name of the database administrator for MSSQL Server. If you have created a separate user for installing Enterprise Chat and Email databases, provide the name of that user ( <a href="#">page 26</a> ).<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode. |           |
| 27.                               | Database administrator password  | Password of the database administrator.<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode.                                                                                                                                                                      |           |
| 28.                               | Cisco Database user name         | User name required to connect to the master database. The installation program creates the database and its user.                                                                                                                                                                                                           |           |
| 29.                               | Cisco Database password          | Password for the master database user.                                                                                                                                                                                                                                                                                      |           |
| <b>Active Database Parameters</b> |                                  |                                                                                                                                                                                                                                                                                                                             |           |
| 30.                               | Server name                      | Name of the local or remote server on which you want to install the active database.<br><b>Note:</b> It must be the same server on which the master database is installed.                                                                                                                                                  |           |
| 31.                               | Database name                    | Name of the active database. The installation program creates a database with the name you provide here.                                                                                                                                                                                                                    |           |
| 32.                               | Server instance name             | Name of the MSSQL Server instance to be used while creating the database. This should match the value set for the master database instance name.                                                                                                                                                                            |           |
| 33.                               | Database listener port           | Port number of MSSQL Server. This should match the value set for the master database.                                                                                                                                                                                                                                       | 1433      |
| 34.                               | Datafile path                    | Path to the folder on the database server, where you want to create the data file. For example, C:\MSSQL\data.                                                                                                                                                                                                              |           |
| 35.                               | Datafile initial size (MB)       | Minimum size of the data file for the database.                                                                                                                                                                                                                                                                             | 2048      |
| 36.                               | Datafile maximum size (MB)       | Maximum size of the data file for the database.                                                                                                                                                                                                                                                                             | Unlimited |
| 37.                               | Datafile increment size (MB)     | Additional file size limit that will be allocated to the database after the initial size is full.                                                                                                                                                                                                                           | 500       |
| 38.                               | Logfile initial size (MB)        | Minimum size of the log file.                                                                                                                                                                                                                                                                                               | 1024      |
| 39.                               | Logfile maximum size (MB)        | Maximum size of the log file.                                                                                                                                                                                                                                                                                               | Unlimited |

| #                                                                                         | Graphic Installation             | Description                                                                                                                                                                                                                                                                                                                 | Value |
|-------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 40.                                                                                       | Database administrator user name | User name of the database administrator for MSSQL Server. If you have created a separate user for installing Enterprise Chat and Email databases, provide the name of that user ( <a href="#">page 26</a> ).<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode. |       |
| 41.                                                                                       | Database administrator password  | Password of the database administrator.<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode.                                                                                                                                                                      |       |
| 42.                                                                                       | Cisco Database user name         | User name required to connect to the database. The installation program will create this user.<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode.                                                                                                               |       |
| 43.                                                                                       | Cisco Database password          | Password for the database user.<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode.                                                                                                                                                                              |       |
| <b>Active Database Filegroup Parameters [Only for Enterprise Edition of MSSQL Server]</b> |                                  |                                                                                                                                                                                                                                                                                                                             |       |
| 44.                                                                                       | Filegroup Datafile 1 Name        | Provide the name of the first file group to be created for the active database.                                                                                                                                                                                                                                             |       |
| 45.                                                                                       | Filegroup Datafile 1 Path        | Provide the location for the first filegroup. If you created a separate drive for the file groups, then provide the path to that drive ( <a href="#">page 25</a> ).                                                                                                                                                         |       |
| 46.                                                                                       | Filegroup Datafile 2 Name        | Provide the name of the second file group to be created for the active database.                                                                                                                                                                                                                                            |       |
| 47.                                                                                       | Filegroup Datafile 2 Path        | Provide the location for the second filegroup. If you created a separate drive for the file groups, then provide the path to that drive ( <a href="#">page 25</a> ).                                                                                                                                                        |       |
| 48.                                                                                       | Filegroup Datafile 3 Name        | Provide the name of the third file group to be created for the active database.                                                                                                                                                                                                                                             |       |
| 49.                                                                                       | Filegroup Datafile 3 Path        | Provide the location for the third filegroup. If you created a separate drive for the file groups, then provide the path to that drive ( <a href="#">page 25</a> ).                                                                                                                                                         |       |
| 50.                                                                                       | Filegroup Datafile 4 Name        | Provide the name of the fourth file group to be created for the active database.                                                                                                                                                                                                                                            |       |
| 51.                                                                                       | Filegroup Datafile 4 Path        | Provide the location for the fourth filegroup. If you created a separate drive for the file groups, then provide the path to that drive ( <a href="#">page 25</a> ).                                                                                                                                                        |       |
| <b>Reports Database Parameters [Only for Enterprise Edition of MSSQL Server]</b>          |                                  |                                                                                                                                                                                                                                                                                                                             |       |
| 52.                                                                                       | Server name                      | Name of the local or remote server on which the reports database should be installed.<br><b>Note:</b> Make sure you provide the DNS host name and not the IP address of the server.                                                                                                                                         |       |

| #                                                                                          | Graphic Installation             | Description                                                                                                                                                                                                                                                                                                                 | Value     |
|--------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 53.                                                                                        | Database name                    | Name of the reports database. The installation program creates a database with the name you type here.                                                                                                                                                                                                                      |           |
| 54.                                                                                        | Database server instance         | Name of the MSSQL Server instance to be used while creating the database. Set this value only if you are using a named instance, and not the default instance.                                                                                                                                                              |           |
| 55.                                                                                        | Database listener port           | Port number of the MSSQL Server.                                                                                                                                                                                                                                                                                            | 1433      |
| 56.                                                                                        | Datafile path                    | Path to the folder on the database server, where you want to create the data file. For example, D:\MSSQL\data.                                                                                                                                                                                                              |           |
| 57.                                                                                        | Datafile initial size (MB)       | Minimum size of the data file for the database.                                                                                                                                                                                                                                                                             | 1024      |
| 58.                                                                                        | Datafile maximum size (MB)       | Maximum size of the data file for the database.                                                                                                                                                                                                                                                                             | Unlimited |
| 59.                                                                                        | Datafile increment size (MB)     | Additional file size limit that will be allocated to the database after the initial size is full.                                                                                                                                                                                                                           | 500       |
| 60.                                                                                        | Logfile initial size (MB)        | Minimum size of the log file.                                                                                                                                                                                                                                                                                               | 512       |
| 61.                                                                                        | Logfile maximum size (MB)        | Maximum size of the log file.                                                                                                                                                                                                                                                                                               | Unlimited |
| 62.                                                                                        | Database administrator user name | User name of the database administrator for MSSQL Server. If you have created a separate user for installing Enterprise Chat and Email databases, provide the name of that user ( <a href="#">page 26</a> ).<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode. |           |
| 63.                                                                                        | Database administrator password  | Password of the database administrator.<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode.                                                                                                                                                                      |           |
| 64.                                                                                        | Cisco Database user name         | User name required to connect to the reports database. The installation program will create this user.<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode.                                                                                                       |           |
| 65.                                                                                        | Cisco Database password          | Password for the database user.<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode.                                                                                                                                                                              |           |
| <b>Reports Database Filegroup Parameters [Only for Enterprise Edition of MSSQL Server]</b> |                                  |                                                                                                                                                                                                                                                                                                                             |           |
| 66.                                                                                        | Filegroup Datafile 1 Name        | Provide the name of the first file group to be created for the reports database.                                                                                                                                                                                                                                            |           |
| 67.                                                                                        | Filegroup Datafile 1 Path        | Provide the location for the first filegroup. If you created a separate drive for the file groups, then provide the path to that drive ( <a href="#">page 25</a> ).                                                                                                                                                         |           |
| 68.                                                                                        | Filegroup Datafile 2 Name        | Provide the name of the second file group to be created for the reports database.                                                                                                                                                                                                                                           |           |
| 69.                                                                                        | Filegroup Datafile 2 Path        | Provide the location for the second filegroup. If you created a separate drive for the file groups, then provide the path to that drive ( <a href="#">page 25</a> ).                                                                                                                                                        |           |

| #                                                                                     | Graphic Installation             | Description                                                                                                                                                                                                                                                                                                                 | Value     |
|---------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 70.                                                                                   | Filegroup Datafile 3 Name        | Provide the name of the third file group to be created for the reports database.                                                                                                                                                                                                                                            |           |
| 71.                                                                                   | Filegroup Datafile 3 Path        | Provide the location for the third filegroup. If you created a separate drive for the file groups, then provide the path to that drive ( <a href="#">page 25</a> ).                                                                                                                                                         |           |
| 72.                                                                                   | Filegroup Datafile 4 Name        | Provide the name of the fourth file group to be created for the reports database.                                                                                                                                                                                                                                           |           |
| 73.                                                                                   | Filegroup Datafile 4 Path        | Provide the location for the fourth filegroup. If you created a separate drive for the file groups, then provide the path to that drive ( <a href="#">page 25</a> ).                                                                                                                                                        |           |
| <b>Reports Database SSIS Parameters [Only for Enterprise Edition of MSSQL Server]</b> |                                  |                                                                                                                                                                                                                                                                                                                             |           |
| 74.                                                                                   | SSIS Datafile Path               | Provide the path of the SSIS Directory created on the reports database server ( <a href="#">page 34</a> ). For example, D:\ssis_data                                                                                                                                                                                        |           |
| <b>Archive Database Parameters [Only for Standard Edition of MSSQL Server]</b>        |                                  |                                                                                                                                                                                                                                                                                                                             |           |
| 75.                                                                                   | Server name                      | Name of the local or remote server on which the archive database should be installed.<br><b>Note:</b> Make sure you provide the DNS host name and not the IP address of the server.                                                                                                                                         |           |
| 76.                                                                                   | Database name                    | Name of the archive database. The installation program creates a database with the name you provide here.                                                                                                                                                                                                                   |           |
| 77.                                                                                   | Database server instance         | Name of the MSSQL Server instance to be used while creating the database. Set this value only if you are using a named instance, and not the default instance.                                                                                                                                                              |           |
| 78.                                                                                   | Database listener port           | Port number of the MSSQL Server.                                                                                                                                                                                                                                                                                            | 1433      |
| 79.                                                                                   | Datafile path                    | Path to the folder on the database server, where you want to create the data file. For example, C:\MSSQL\Data.                                                                                                                                                                                                              |           |
| 80.                                                                                   | Datafile initial size (MB)       | Minimum size of the data file for the database.                                                                                                                                                                                                                                                                             | 512       |
| 81.                                                                                   | Datafile maximum size (MB)       | Maximum size of the data file for the database.                                                                                                                                                                                                                                                                             | Unlimited |
| 82.                                                                                   | Datafile increment size (MB)     | Additional file size limit that will be allocated to the database after the initial size is full.                                                                                                                                                                                                                           | 10        |
| 83.                                                                                   | Logfile initial size (MB)        | Minimum size of the log file.                                                                                                                                                                                                                                                                                               | 50        |
| 84.                                                                                   | Logfile maximum size (MB)        | Maximum size of the log file.                                                                                                                                                                                                                                                                                               | Unlimited |
| 85.                                                                                   | Database administrator user name | User name of the database administrator for MSSQL Server. If you have created a separate user for installing Enterprise Chat and Email databases, provide the name of that user ( <a href="#">page 26</a> ).<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode. |           |

| #                                     | Graphic Installation            | Description                                                                                                                                                                                                           | Value |
|---------------------------------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 86.                                   | Database administrator password | Password of the database administrator.<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode.                                                                |       |
| 87.                                   | Cisco Database user name        | User name required to connect to the archive database. The installation program will create this user.<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode. |       |
| 88.                                   | Cisco Database password         | Password for the database user.<br><b>Note:</b> This property needs to be configured only if you are using the SQL Server Authentication mode.                                                                        |       |
| <b>Domain User Account Parameters</b> |                                 |                                                                                                                                                                                                                       |       |
| 89.                                   | Domain user name                | User name of the domain user account you created for use by the application. For more information, refer to <a href="#">“Setting Up User Accounts and Permissions” on page 22.</a>                                    |       |
| 90.                                   | Domain user password            | Password for the domain user.                                                                                                                                                                                         |       |

*Database server details*

## Web Server Details

| #                                          | Graphic Installation                     | Description                                                                                                                                                                                                          | Value            |
|--------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Application Server Parameters</b>       |                                          |                                                                                                                                                                                                                      |                  |
| 1.                                         | Application server name                  | Type the name of the application server for which you want to configure the web server.<br><b>Note:</b> Make sure you provide the DNS host name and not the IP address of the server.                                |                  |
| <b>Enterprise Chat and Email Directory</b> |                                          |                                                                                                                                                                                                                      |                  |
| 2.                                         | Enterprise Chat and Email Home Directory | Provide the path of the directory where you would like to install ECE. For example, C:\Cisco.<br><b>Note:</b> Make sure that the path and folder name do not contain any of the following characters: *?<> +^'"%`',@ |                  |
| <b>IIS Web Site Parameters</b>             |                                          |                                                                                                                                                                                                                      |                  |
| 3.                                         | IIS Web Site Name                        | Name of the IIS Web Site on which the application is to be configured.                                                                                                                                               | Default Web Site |
| <b>Cisco Application Context Root</b>      |                                          |                                                                                                                                                                                                                      |                  |
| 4.                                         | Context Root Name                        | Provide the same context root name which was provided at the time of installing the Cisco database server ( <a href="#">page 45</a> ).                                                                               |                  |
| <b>Cisco Partition Name</b>                |                                          |                                                                                                                                                                                                                      |                  |
| 5.                                         | Partition Name                           | Provide the name for the business partition. Make sure you provide the same name which was provided at the time of installing the Cisco database server ( <a href="#">page 45</a> ).                                 |                  |
| <b>Domain User Account Parameters</b>      |                                          |                                                                                                                                                                                                                      |                  |
| 6.                                         | Domain user name                         | User name of the domain user account you created for use by the application. For more information, refer to <a href="#">“Setting Up User Accounts and Permissions” on page 22</a> .                                  |                  |
| 7.                                         | Domain user password                     | Password for the domain user.                                                                                                                                                                                        |                  |

*Web server details*

## Messaging Server Details

| #                                               | Graphic Installation                     | Description                                                                                                                                                                                                                                                                                                           | Value |
|-------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| <b>File Server Parameters</b>                   |                                          |                                                                                                                                                                                                                                                                                                                       |       |
| 1.                                              | File Server name/NAS Path                | The fully qualified domain name of the file server. If the file server is installed on a NAS device, provide the path to the shared folder on the NAS device. For example, \\SharedSpace\Cisco.<br><b>Note:</b> Make sure you provide the DNS host name and not the IP address of the server.                         |       |
| <b>Enterprise Chat and Email Home Directory</b> |                                          |                                                                                                                                                                                                                                                                                                                       |       |
| 2.                                              | Enterprise Chat and Email Home Directory | Provide the path of the directory where you would like to install Enterprise Chat and Email. For example, C:\Cisco. The installation program also installs WildFly and JDK at the same location.<br><b>Note:</b> Make sure that the path and folder name do not contain any of the following characters: *?<> +^"%',@ |       |
| <b>WildFly Parameters</b>                       |                                          |                                                                                                                                                                                                                                                                                                                       |       |
| 3.                                              | WildFly HTTP port                        | Port number used by WildFly.                                                                                                                                                                                                                                                                                          | 9001  |
| 4.                                              | WildFly HTTP SSL Port                    | Secure Sockets Layer port number used by WildFly.                                                                                                                                                                                                                                                                     | 9002  |
| <b>Domain User Account Parameters</b>           |                                          |                                                                                                                                                                                                                                                                                                                       |       |
| 5.                                              | Domain user name                         | User name of the domain user account you created for use by the application. For more information, refer to <a href="#">“Setting Up User Accounts and Permissions” on page 22.</a>                                                                                                                                    |       |
| 6.                                              | Domain user password                     | Password for the domain user.                                                                                                                                                                                                                                                                                         |       |

*Messaging server details*

## Application Server Details

| #                             | Graphic Installation       | Description                                                                                                                                                                                                                                                                                  | Value |
|-------------------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| <b>File Server Parameters</b> |                            |                                                                                                                                                                                                                                                                                              |       |
| 1.                            | File Server name/ NAS Path | The fully qualified domain name of the file server. If the file server is installed on a NAS device, provide the path to the shared folder on the NAS device. For example, \\SharedSpace\Cisco<br><b>Note:</b> Make sure you provide the DNS host name and not the IP address of the server. |       |

| #                                               | Graphic Installation                     | Description                                                                                                                                                                                                                                                                                             | Value |
|-------------------------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| <b>Enterprise Chat and Email Home Directory</b> |                                          |                                                                                                                                                                                                                                                                                                         |       |
| 2.                                              | Enterprise Chat and Email Home Directory | Provide the path of the directory where you would like to install ECE. For example, C:\C i s co. The installation program also installs WildFly and JDK at the same location.<br><br><b>Note:</b> Make sure that the path and folder name do not contain any of the following characters: *?<> +^"%`',@ |       |
| <b>WildFly Parameters</b>                       |                                          |                                                                                                                                                                                                                                                                                                         |       |
| 3.                                              | WildFly HTTP port                        | Port number used by JBoss.                                                                                                                                                                                                                                                                              | 9001  |
| 4.                                              | WildFly HTTP SSL Port                    | Secure Sockets Layer port number used by JBoss.                                                                                                                                                                                                                                                         | 9002  |
| <b>Domain User Account Parameters</b>           |                                          |                                                                                                                                                                                                                                                                                                         |       |
| 5.                                              | Domain user name                         | User name of the domain user account you created for use by the application. For more information, refer to <a href="#">“Setting Up User Accounts and Permissions”</a> on page 22.                                                                                                                      |       |
| 6.                                              | Domain user password                     | Password for the domain user.                                                                                                                                                                                                                                                                           |       |

*Application server details*

## Services Server Details

| #                                               | Graphic Installation                     | Description                                                                                                                                                                                                                                                                                  | Value |
|-------------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| <b>File Server Parameters</b>                   |                                          |                                                                                                                                                                                                                                                                                              |       |
| 1.                                              | File Server name/NAS Path                | The fully qualified domain name of the file server. If the file server is installed on a NAS device, provide the path to the shared folder on the NAS device. For example, \\SharedSpace\Cisco<br><b>Note:</b> Make sure you provide the DNS host name and not the IP address of the server. |       |
| <b>Enterprise Chat and Email Home Directory</b> |                                          |                                                                                                                                                                                                                                                                                              |       |
| 2.                                              | Enterprise Chat and Email Home Directory | Provide the path of the directory where you would like to install ECE. For example, C:\Cisco. The installation program also installs JDK at the same location.<br><b>Note:</b> Make sure that the path and folder name do not contain any of the following characters: *?<> +^""%`',@        |       |
| <b>RMI and RMID Parameters</b>                  |                                          |                                                                                                                                                                                                                                                                                              |       |
| 3.                                              | RMI registry port                        | Port number used by the Remote Method Invocation (RMI) registry naming service.                                                                                                                                                                                                              | 15099 |
| 4.                                              | RMI activation port                      | Port number used by the RMI Daemon Process.                                                                                                                                                                                                                                                  | 15098 |
| <b>Organization Information</b>                 |                                          |                                                                                                                                                                                                                                                                                              |       |
| 5.                                              | Name                                     | Provide the name of the organization. Make sure that the name does not contain any special characters.                                                                                                                                                                                       |       |
| 6.                                              | Business Unit                            | Provide the business unit name. Make sure that the value does not contain any special characters.                                                                                                                                                                                            |       |
| 7.                                              | Location                                 | Provide the location of your organization. Make sure that the value does not contain any special characters.                                                                                                                                                                                 |       |
| 8.                                              | Country                                  | Select the country from the dropdown list.                                                                                                                                                                                                                                                   |       |
| <b>Domain User Account Parameters</b>           |                                          |                                                                                                                                                                                                                                                                                              |       |
| 9.                                              | Domain user name                         | User name of the domain user account you created for use by the application. For more information, refer to <a href="#">“Setting Up User Accounts and Permissions” on page 22.</a>                                                                                                           |       |
| 10.                                             | Domain user password                     | Password for the domain user.                                                                                                                                                                                                                                                                |       |

*Services server details*



# Post-Installation Tasks

- ▶ [Configuring Permissions on IIS Config Folder](#)
- ▶ [Configuring SSL for Secure Connections](#)
- ▶ [Creating an Encrypted SQL Server Database](#)
- ▶ [Configuring SMTP Server Relay Address List](#)
- ▶ [Configuring Finesse](#)
- ▶ [Configuring Active Directory Federation Services for Single Sign-On](#)
- ▶ [Starting ECE](#)
- ▶ [Stopping ECE](#)
- ▶ [Signing in to ECE](#)
- ▶ [Integrating ECE with Unified CCE](#)
- ▶ [Configuring Important Settings](#)
- ▶ [Uninstalling ECE](#)

This chapter guides you through the tasks to be performed after installing the system. It also describes the process of uninstalling ECE.

## Configuring Permissions on IIS Config Folder

- ▶ Skip this task if it was done as part of the pre-installation tasks ([page 37](#)). Ensure that the user account that you used for installing the application ([page 22](#)) has read permissions on the following folder on the web server: %systemroot%\system32\inet\_srv\config.

## Configuring SSL for Secure Connections

- ▶ You must set up Secure Sockets Layer (SSL) for more secure connections between browsers and the servers in your installation. This is a required step. See “[SSL Configuration](#)” on [page 93](#) for details.

## Creating an Encrypted SQL Server Database

This is an optional task and you need to do it only if you want to encrypt the databases. This feature is available only for MS SQL Server Enterprise edition. You can do this task any time after installing the ECE application.

### To create an encrypted SQL server database:

1. Create a master key in the master database. This key is then used to create the server certificate that can be used to secure the database encryption key. Connect to the master database and run the following query.

```
USE master
GO
CREATE MASTER KEY ENCRYPTION BY PASSWORD = 'company@123'
GO
```

2. Backup the master key. This creates a certificate in the master database.

```
BACKUP MASTER KEY TO FILE = 'c:\temp\masterkey'
    ENCRYPTION BY PASSWORD = 'company@123'
GO
```

3. Now create the server certificate database encryption key ("DEK").

```
USE master
GO
CREATE CERTIFICATE DEKCert WITH SUBJECT = 'DEK Certificate'
GO
```

4. Create a backup of the server certificate database encryption key ("DEK").

```

BACKUP CERTIFICATE DEKCert TO FILE = 'c:\DEKCert'
WITH PRIVATE KEY ( FILE = 'c:\temp\DEKCertPrivKey' ,
ENCRYPTION BY PASSWORD = 'company@123' )
GO

```

5. Create database encryption key for the database where you wish to configure transparent data encryption. In the following query, *eGActiveDB\_name* is the name of the active database.

```

USE eGActiveDB_name
GO

CREATE DATABASE ENCRYPTION KEY
WITH ALGORITHM = AES_128
ENCRYPTION BY SERVER CERTIFICATE DEKCert
GO

```

You now have all the prerequisites for enabling transparent data encryption, so database encryption can be enabled.

6. Enable database encryption. Run the following query where *eGActiveDB\_name* is the name of the active database.

```

ALTER DATABASE eGActiveDB_name SET ENCRYPTION ON

```

By setting encryption on, a background task starts encrypting all the data pages and the log file. This can take a considerable amount of time, depending on the size of the database.

Database maintenance operations should not be performed when this encryption scan is running.

7. To query the status of the database encryption and its percentage completion, query the new `sys.dm_database_encryption_keys` DMV.

```

SELECT DB_NAME(e.database_id) AS DatabaseName,
       e.database_id,
       e.encryption_state,
       CASE e.encryption_state
         WHEN 0 THEN 'No database encryption key present, no encryption'
         WHEN 1 THEN 'Unencrypted'
         WHEN 2 THEN 'Encryption in progress'
         WHEN 3 THEN 'Encrypted'
         WHEN 4 THEN 'Key change in progress'
         WHEN 5 THEN 'Decryption in progress'
       END AS encryption_state_desc,
       c.name,
       e.percent_complete
FROM sys.dm_database_encryption_keys AS e
LEFT JOIN master.sys.certificates AS c
ON e.encryptor_thumbprint = c.thumbprint

```

## Configuring SMTP Server Relay Address List

---

- ▶ The default SMTP server configured during the installation process is used to send notifications.

To allow the system to successfully send such emails, verify that the IP addresses of all the application servers in the configuration are added to the relay address list of the SMTP server.

## Configuring Finesse

---

- ▶ Agents always access ECE through Finesse. After installing ECE, configure Finesse to add the ECE gadget. For details about doing this task, see *Enterprise Chat and Email Deployment and Maintenance Guide*.

## Configuring Active Directory Federation Services for Single Sign-On

---

- ▶ Single Sign-On with Cisco IDS requires that ECE is connected to Active Directory Federation Services (AD FS). If you are planning to use single sign-on, see [“Single Sign-On Configuration” on page 67](#) for details about configuring AD FS.

## Starting ECE

---

There is no mandatory sequence that should be followed while starting ECE. All the machines on which components are installed should be running and available on the network.



**Important:** Run the application using the same domain account that was used for installing the application ([page 22](#)).

### To start ECE:

If you get the following error while starting the Cisco Service, see [“Troubleshooting Application Start-Up Issues” on page 60](#): Error 1069: The service did not start due to login failure.

- ▶ In collocated installation:
  - On the server where application, messaging, services, file, and database components are installed, start the Cisco Service from the Windows Services panel.
- ▶ In a distributed-server installation:

Ensure that all the machines in the configuration are available and connected to the network.

  - a. Start Cisco Service on the messaging server by starting the Cisco Windows service from the Windows Services panel.

- b. On the services server, start the application by starting the Cisco Windows service from the Windows Services panel.
- c. On each application server, start the application by starting the Cisco Windows service from the Windows Services panel.

## Troubleshooting Application Start-Up Issues

Perform these tasks if you get the following error while starting the service: **Error 1069: The service did not start due to login failure.**

### To troubleshoot:

1. In the Windows service panel, right-click the Cisco Service and from the menu select **Properties**.
2. In the Properties window, go to the Log On tab and provide the password of the domain user account ([page 22](#)) and click **Apply**.
3. Start the Cisco Service.

## Stopping ECE

---

If you need to stop the application at any point during the post-installation tasks, follow the steps in this section.

In a distributed environment, stop the application on the following servers. There is no mandatory sequence that should be followed while stopping the application.

- ▶ The application servers
- ▶ The messaging servers
- ▶ The services server

### To stop ECE:

- ▶ In collocated installation:
  - On the server where application, web, messaging, services, file, and database components are installed, stop the Cisco Service from the Windows Services panel.
- ▶ In a distributed-server installation:
  - a. On each application server machine, stop the Cisco Service from the Windows Services panel.
  - b. On the messaging server machine, stop the Cisco Service from the Windows Services panel.
  - c. On the services server machine, stop the Cisco Service from the Windows Services panel.
  - d. On the services server machine, open the Windows Task Manager and verify that none of the javaw and java processes (the services) are running.

# Signing in to ECE

---

## Signing in to Agent Console

### To sign in to the Agent Console:

1. Ensure that the desktops meet the requirements outlined in *System Requirements for Enterprise Chat and Email*.
2. Access the Finesse URL from a browser and sign in to Finesse: `https://Finesse_Server_Name/desktop`
3. Click on the Manage Chat and Email tab. If Single Sign-On is enabled, then the agent will be logged in automatically. If not, enter the username and password and click **Sign In**.

## Signing in to All Other Consoles

A system partition and a business partition are created during the installation. To begin using the application, you log in to the business partition.

### To sign in to the business partition:

1. Ensure that you have followed the instructions in the *Enterprise Chat and Email Browser Settings Guide* document to configure your browser, and that the desktops meet the requirements outlined in *System Requirements for Enterprise Chat and Email*.
2. Type the URL `http://Web_server.company.com/Partition_name` in your browser, where *Web\_server.company.com* is the fully qualified domain name of your web server and *Partition\_name* is the virtual directory created for this partition. During the installation, you are prompted to provide the partition name in the Partition Administrator Account and Partition window. This is used to create the virtual directory. If you have configured the web server to use SSL, then the URL is `https://Web_Server.company.com/Partition_name`.

Always use the fully qualified domain name of the web server when you type the URL to access ECE.

3. In the Sign In window, type the user name and password you had set up for the partition administrator in the Partition Administrator Login Parameters window during the installation. Click the **Log In** button.

# Integrating ECE with Unified CCE

---

Integration between ECE and Unified CCE is enabled and configured through the Administration Console.

### To integrate ECE with Unified CCE:

1. Sign in to the Administration Console as a partition administrator.
2. In the Tree pane, browse to **Administration > Partition:** *Partition Name* > **Integration > Unified CCE > Unified CCE**.
3. Go to the On-Premise tab and provide the following details for the Primary AWDB.

- **Authentication:** Select from **Windows Authentication** or **SQL Authentication**.
- **Unified CCE administration host name:** The server name or IP address of the Unified CCE host.
- **Active:** Set to **Yes**.
- **SQL server database name:** The name of the AWDB database.
- **Port number:** Set the value to match the port configured in Unified CCE. By default the value is set to 1433.
- **Database administrator login name:** The database administrator's user name. This value needs to be set only when using **SQL Authentication**.
- **Database administrator login password:** The database administrator password. This value needs to be set only when using **SQL Authentication**.
- **Maximum capacity:** The maximum number of allowed connections to be made to the AWDB. By default, this is set to 360.

| Name                                    | Value                     |
|-----------------------------------------|---------------------------|
| Authentication *                        | SQL Server Authentication |
| Unified CCE administration host name *  | 61.70.10.10               |
| Active *                                | Yes                       |
| SQL Server database name *              | c11_awdb                  |
| Port number *                           | 1433                      |
| Database administrator login name *     | sa                        |
| Database administrator login password * | *****                     |
| Maximum capacity *                      | 360                       |

*Provide the primary AWDB server details*

- If you have a secondary AWDB and wish to apply it to your integration, click the Secondary AWDB section and provide the necessary details.
- Click the **Save**  button.
- In the Properties pane, on the Configuration tab, set the following:
  - Select the Application Instance.

- Select any Agent Peripheral Gateways that apply.



**Important:** When you save your changes, your system is permanently connected to your Unified CCE installation. This cannot be undone.

| Name                   | Value                |
|------------------------|----------------------|
| Application instance * | ApplicationInstance1 |

Peripherals

| Available Agent Peripheral Gateways | Selected Agent Peripheral Gateways |
|-------------------------------------|------------------------------------|
| AgentPG2                            | AgentNPG                           |

*Provide configuration details*

7. Click the **Save** button. Your system is now connected with Unified CCE. To complete the integration, you must configure your media classes, and import the MRDs users and skill groups from the Unified CCE system. For details about doing this task, see the *Enterprise Chat and Email Administrator's Guide to Administration Console*.

## Configuring Important Settings

This section introduces the main settings that allow you to configure various aspects of the application. Some settings are configured at the partition level, while others have to be set up for each department.

These settings are of two types:

1. **Mandatory settings:** These settings are configured during installation, and must be verified before using the application. Settings related to ESMTP protocol, must be configured manually if you are using ESMTP protocol for email notifications.
2. **Optional settings:** Although it is not mandatory to change these settings, you are likely to feel the need to configure them for your business.

## Mandatory Settings

### At the partition level

The following setting must be configured if you are using Single Sign-on or reports notifications:

- Web server URL or Load Balancer URL

The following settings are updated during installation, but we recommend that you log in to the application as a partition administrator, and verify and update them from the Administration Console, if required. The application starts using this information as soon as the installation is complete.

- ▶ Default SMTP server
- ▶ Notifications mail SMTP Server
- ▶ From: address for notification from Service
- ▶ To: address for notification from Service

### **At the department level**

This setting is automatically updated for the first department created by the installation program. For all subsequent departments, the administrator must configure it.

- ▶ From email address for alarm

## **Optional Settings**

Although it is not mandatory to change these settings, you are likely to feel the need to configure them for your business.

### **At the partition level**

- ▶ Customer departmentalization
- ▶ Session time out
- ▶ Inactive time out
- ▶ Exception email SMTP
- ▶ Exception mail redirection to address
- ▶ Exception mail redirection from address
- ▶ Autopushback time (minutes after logout)
- ▶ Chat auto-pushback settings

### **At the department level**

- ▶ Business calendar time zone

For a complete list of all available settings, refer to the *Enterprise Chat and Email Administrator's Guide to Administration Console*.

## **Uninstalling ECE**

---

The application needs to be uninstalled from the following servers. The uninstallation program can be run in any order on these servers.

- ▶ Application Server
- ▶ Messaging Server
- ▶ Services Server

- ▶ Web Server
- ▶ File Server

To ensure that critical data is not lost, the program does not uninstall the following components:

- ▶ The databases
- ▶ The following folders on the file server:
  - *Cisco\_Home\eService\storage*
  - *Cisco\_Home\eService\logs*

## Preparing to Uninstall

### Stopping the Application

- ▶ Before you begin the uninstallation process, make sure you stop ECE. For details, refer to [“Stopping ECE” on page 60](#).

### Stopping IIS

- ▶ Stop IIS (World Wide Web Publishing Service) on all web servers in the installation.

## Uninstalling ECE

### To uninstall in graphical mode:

1. Go to **Start > Settings > Control Panel**.
2. Click **Programs** in the Control Panel window.
3. Click **Programs and Features** in the Programs window.
4. From the list of currently installed programs, right-click Enterprise Chat and Email and select **Uninstall/Change**.
5. In the Uninstall Enterprise Chat and Email window, click the **Uninstall** button.
6. When the uninstallation is complete, you are given a choice of restarting the server right away, or doing it later.
7. On the database server, go to the SQL Server Management Studio and delete the following, if required.
  - Go to **Databases** and delete the databases.
  - Go to **Security > Logins** and delete the logins created for the databases.
  - Go to **SQL Server Agent > Jobs** and delete the SQL Jobs for the databases. The jobs related to your databases will have the database name in the end. For example, *populate my\_eGReportsDB*.

## Performing Post Uninstallation tasks

### **Starting IIS**

- ▶ Start IIS (World Wide Web Publishing Service) on all web servers in the installation.



# Single Sign-On Configuration

- ▶ [Configuring Single AD FS Deployment](#)
- ▶ [Configuring Split AD FS Deployment](#)
- ▶ [Configuring Single Sign-On in ECE](#)

Single Sign-On with Cisco IDS requires that ECE is connected to Active Directory Federation Services (AD FS). You can use one of the following options for AD FS:

- ▶ **Single AD FS:** In a single AD FS deployment, Resource Federation Server and Account Federation Server are installed on the same machine (page 68).
- ▶ **Split AD FS:** In a split AD FS deployment, Resource Federation Server and Account Federation Server are installed on separate machines (page 76).

## Configuring Single AD FS Deployment

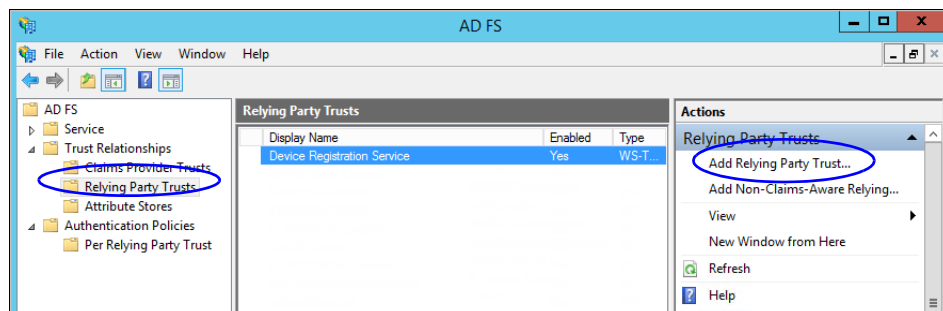
In a single AD FS deployment, Resource Federation Server and Account Federation Server are installed on the same machine.

### Configuring Relying Party Trust for ECE

Perform these tasks on the server where Resource Federation Server and Account Federation Server are installed.

#### To configure relying party trust for ECE in single AD FS:

1. Go to the Start menu and open AD FS Management console.
2. In the AD FS Management console, navigate to **AD FS > Trust Relationships > Relying Party Trust**.
3. In the Actions section, go to Relying Party Trust, and click **Add Relying Party Trust...**



4. In the Add Relying Party Trust Wizard that appears, do the following:
  - a. On the Welcome screen, click **Start**.

- b. On the Select Data Source screen, select the **Enter data about the reply party manually** option and click **Next**.

The screenshot shows the 'Add Relying Party Trust Wizard' window, specifically the 'Select Data Source' step. On the left, a 'Steps' list shows 'Select Data Source' as the current step. The main area has two radio button options. The first option, 'Import data about the relying party published online or on a local network', is unselected. The second option, 'Import data about the relying party from a file', is also unselected. The third option, 'Enter data about the relying party manually', is selected and circled in blue. Below this option is a text box for 'Federation metadata file location' and a 'Browse...' button. At the bottom, there are '< Previous', 'Next >', and 'Cancel' buttons.

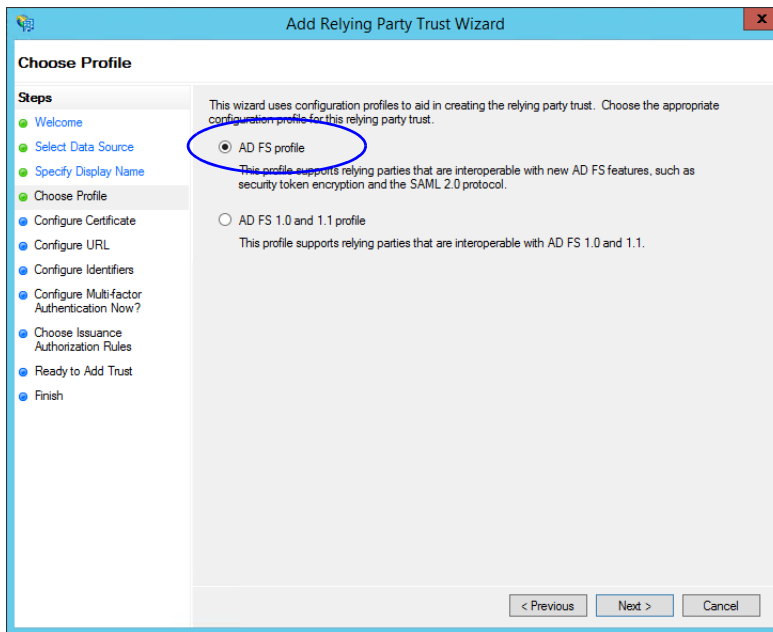
*Select the Enter data about the reply party manually option*

- c. On the Specify Display Name screen, provide a **Display name** for the relying party. Click **Next**.

The screenshot shows the 'Add Relying Party Trust Wizard' window, specifically the 'Specify Display Name' step. On the left, the 'Steps' list shows 'Specify Display Name' as the current step. The main area has a text box for 'Display name:' which is circled in blue and contains the text 'v2w55 Console'. Below this is a larger text box for 'Notes:'. At the bottom, there are '< Previous', 'Next >', and 'Cancel' buttons.

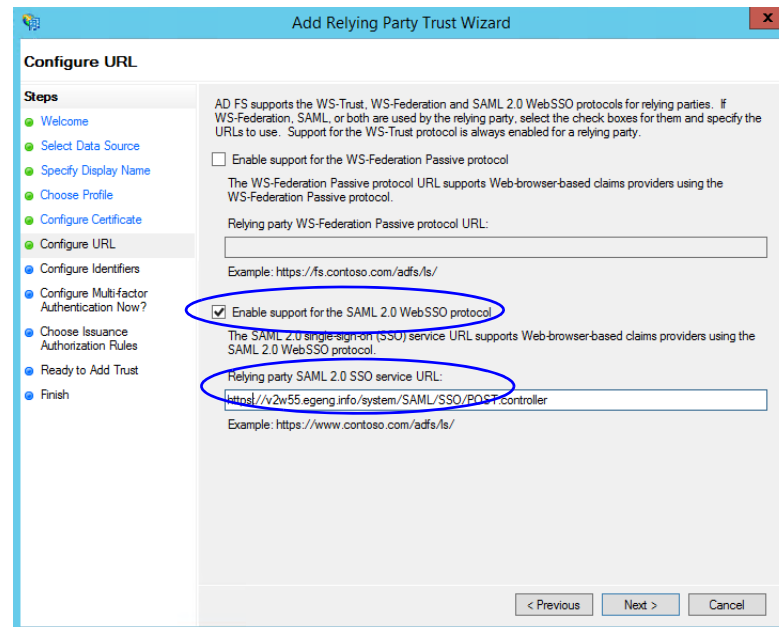
*Provide a display name*

- d. On the Choose Profile screen, select **AD FS profile** and click **Next**.



Select AD FS profile

- e. On the configure Certificate screen, click **Next**.
- f. On the Configure URL screen, set the following:
- Select the **Enable support for the SAML 2.0 Web SSO protocol** option.
  - In the **Relying Party SAML 2.0 SSO server URL** field provide the URL in the format:  
`https://Web_Server_Or_Load_Balancer_Server/system/SAML/SSO/POST.controller`.  
Replace *Web\_Server\_Or\_Load\_Balancer\_Server* with the ECE web server name or the Load balancer server name.



Configure the URL

- g. On the Configure Identifiers screen, provide the Replying party trust identifier and click **Add**. Value should be in the format: `https://Web_Server_Or_Load_Balancer_Server/`. Replace `Web_Server_Or_Load_Balancer_Server` with the ECE web server name or the Load balancer server name. Click **Next**.

**Add Relying Party Trust Wizard**

**Configure Identifiers**

Relying parties may be identified by one or more unique identifier strings. Specify the identifiers for this relying party trust.

Relying party trust identifier:  
 **Add**

Example: `https://fs.contoso.com/adfs/services/trust`

Relying party trust identifiers:  
**Remove**

< Previous   Next >   Cancel

*Configure the identifiers*

- h. On the next screen, select the **I do not want to configure multi-factor authentication settings for the relying party trust at this time** option.
- i. On the Choose Issuance Authorization Rules screen, select the **Permit all users to access this relying party** option.

**Add Relying Party Trust Wizard**

**Choose Issuance Authorization Rules**

Issuance authorization rules determine whether a user is permitted to receive claims for the relying party. Choose one of the following options for the initial behavior of this relying party's issuance authorization rules.

☒ **Permit all users to access this relying party**  
The issuance authorization rules will be configured to permit all users to access this relying party. The relying party service or application may still deny the user access.

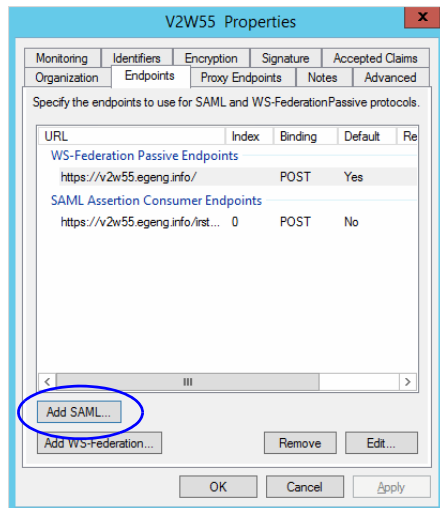
☐ **Deny all users access to this relying party**  
The issuance authorization rules will be configured to deny all users access to this relying party. You must later add issuance authorization rules to enable any users to access this relying party.

You can change the issuance authorization rules for this relying party trust by selecting the relying party trust and clicking Edit Claim Rules in the Actions pane.

< Previous   Next >   Cancel

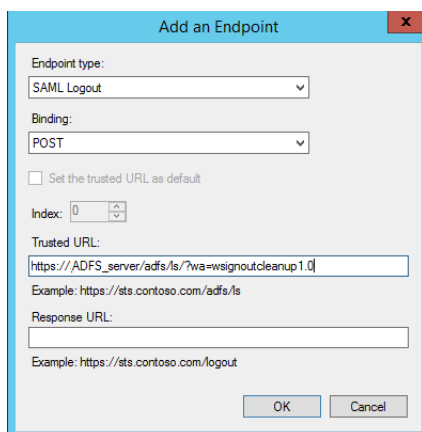
*Select the Permit all users to access this relying party option*

- j. On the Ready to add trust screen, click **Next**.
- k. Uncheck the **Open the Edit Claim Rules dialogue for this relying party trust when the wizard closes** option and click **Close**. At the end, an entry is created in the Relying Provider Trusts list.
5. In the Relying Provider Trusts list, select the trust created for ECE, and in the actions section click **Properties**.
6. In the Properties window, go to the Endpoints tab and click the **Add SAML..** button.



*Click Add SAML*

7. In the Add an Endpoint window, set the following:
  - a. Select the **Endpoint type** as **SAML Logout**.
  - b. Specify the **Trusted URL** as `https://ADFS_server/adfs/ls/?wa=wsignoutcleanup1.0`. Replace *ADFS\_server* with the single AD FS server name.
  - c. Click **OK**.



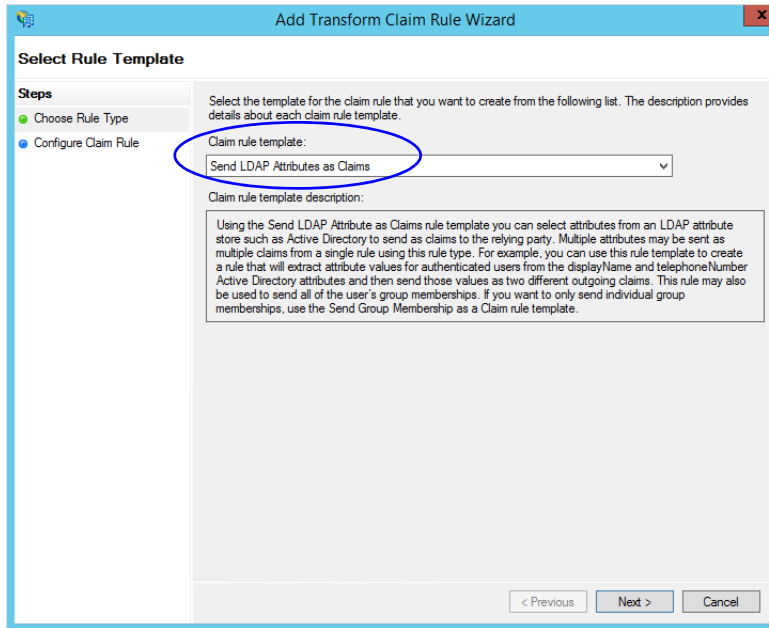
*Create an end point*

8. In the Relying Provider Trusts list, select the trust created for ECE, and in the actions section click **Edit Claim Rules**.

9. In the Edit Claim Rules window, in the Issuance Transform Rules tab, click the **Add Rule...** button.

In the Add Transform Claim Rule wizard that opens, do the following:

- a. On the Choose Rule Type screen, from the **Claim rule template** dropdown, select **Send LDAP Attributes as Claims**. Click **Next**.



*Select the claim rule template*

- b. On the Configure Rule screen, set the following:
- Provide the Claim rule name.
  - Define mapping of LDAP attribute and the outgoing claim type. Select **Name ID** as the outgoing claim type name. Click **Finish** to go back to the Edit Claim Rules for single AD FS window.

**Add Transform Claim Rule Wizard**

**Configure Rule**

**Steps**

- Choose Rule Type
- Configure Claim Rule

You can configure this rule to send the values of LDAP attributes as claims. Select an attribute store from which to extract LDAP attributes. Specify how the attributes will map to the outgoing claim types that will be issued from the rule.

Claim rule name:  
Account name to Name ID

Rule template: Send LDAP Attributes as Claims

Attribute store:  
Active Directory

Mapping of LDAP attributes to outgoing claim types:

| LDAP Attribute (Select or type to add more) | Outgoing Claim Type (Select or type to add more) |
|---------------------------------------------|--------------------------------------------------|
| User-Principal-Name                         | Name ID                                          |

< Previous Finish Cancel

*Configure the rule*

- In the Edit Claim Rules window, in the Issuance Authorization Rules tab, ensure that the rule permits access to all users. Click **OK** to close the window.

**Edit Claim Rules for uslewm02.eng.na**

Issuance Transform Rules Issuance Authorization Rules Delegation Authorization Rules

The following authorization rules specify the users that will be permitted access to the relying party. When the list does not contain a rule, all users will be denied access.

| Order | Rule Name                  | Issued Claims |
|-------|----------------------------|---------------|
| 1     | Permit Access to All Users | Permit        |

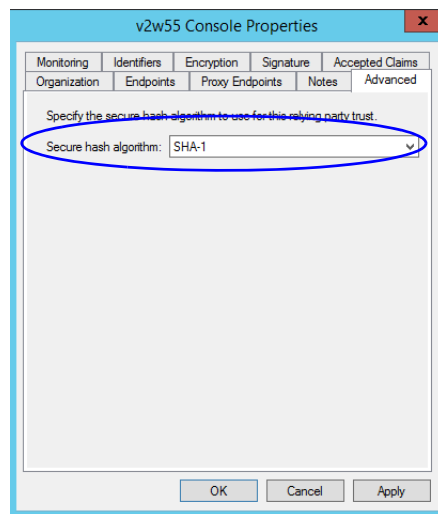
↑ ↓

Add Rule... Edit Rule... Remove Rule...

OK Cancel Apply

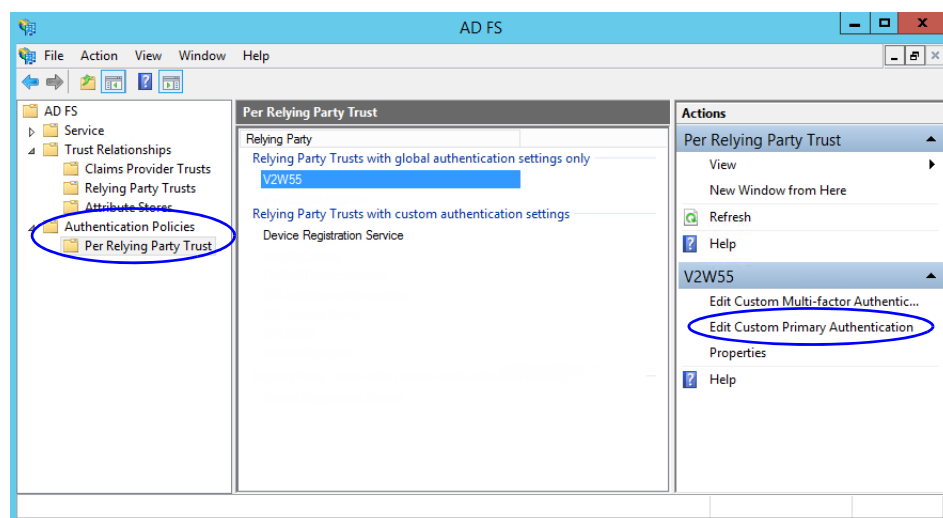
*Check the authorization rules*

11. In the Relying Provider Trusts list, double-click the relying party trust which you created. In the Properties window that opens, go to the Advanced tab and set the **Secure hash algorithm** to **SHA-1**. Click **OK** to close the window.



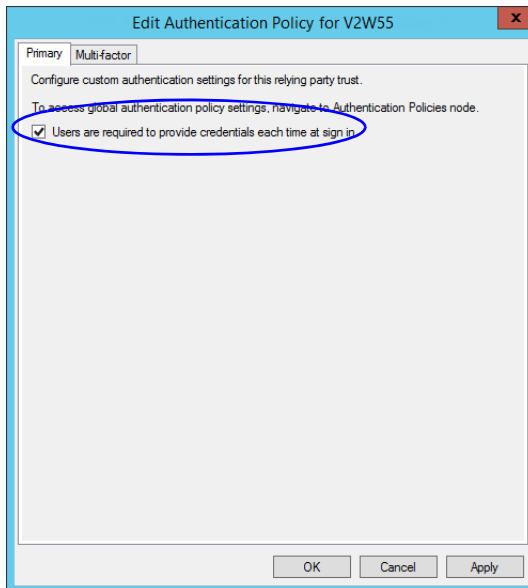
*Set the secure hash algorithm*

12. Next, in the AD FS Management console, go to the **Authentication Policy > Per Relying Party Trust**. Locate the Relying Party Trust created for ECE, and in the Actions section click **Edit Custom Primary Authentication**.



*Change the authentication policy for ECE*

13. In the Edit Authentication Policy window, in the Primary tab, select the **Users are required to provide credentials each time at sign in** option. Click **OK** to close the window.



*Edit the authentication policy*

## Configuring Split AD FS Deployment

In a split AD FS deployment, Resource Federation Server and Account Federation Server are installed on separate machines. Resource Federation Server acts as shared AD FS and Account Federation Server acts as customer AD FS.

Configuring split AD FS includes:

- ▶ [Adding Security Certificates for the AD FS Domains](#)
- ▶ [Configuring Relying Party Trust for Shared AD FS in Customer AD FS](#)
- ▶ [Configuring Claims Provider Trust for Customer AD FS in Shared AD FS](#)
- ▶ [Configuring Relying Party Trust for ECE in Shared AD FS](#)

### Adding Security Certificates for the AD FS Domains

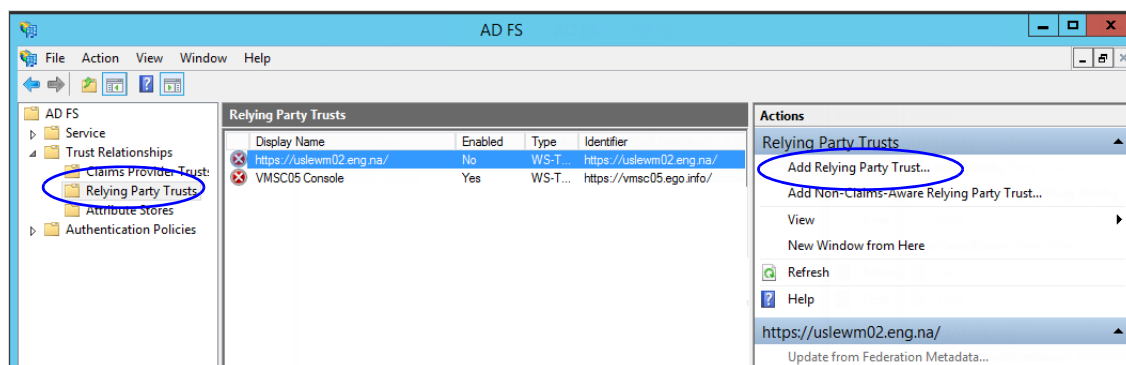
- ▶ If Customer AD FS and Shared AD FS are installed in different domain, you need to add certificates of the domains to the **Trusted Root Certification Authorities** store of the servers. On the Customer AD FS server, add the certificate of the Shared AD FS and vice versa. Contact your IT department to do this task.

# Configuring Relying Party Trust for Shared AD FS in Customer AD FS

Perform these tasks on the server where customer AD FS is installed.

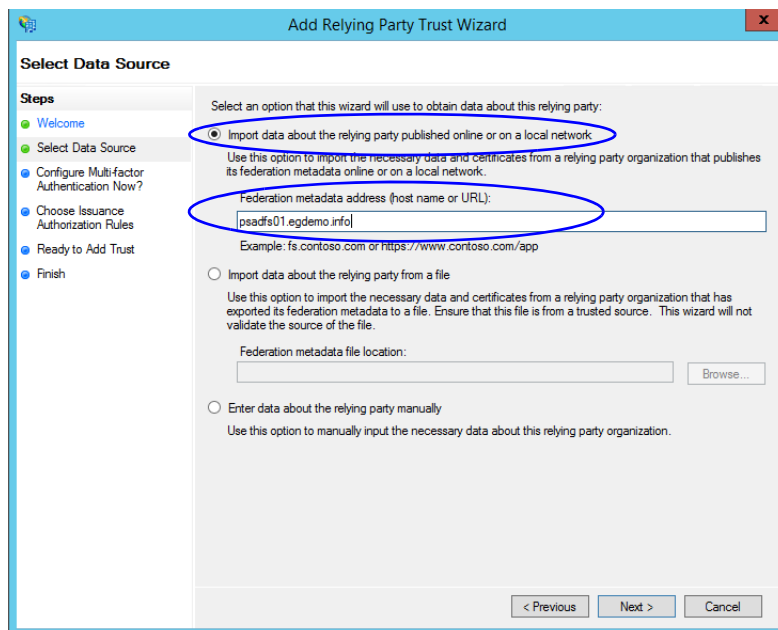
## To configure relying party trust for shared AD FS in customer AD FS:

1. Go to the Start menu and open the AD FS Management console.
2. In the AD FS Management console, navigate to **AD FS > Trust Relationships > Relying Party Trust**.
3. In the Actions section, go to Relying Party Trust, and click **Add Relying Party Trust...**



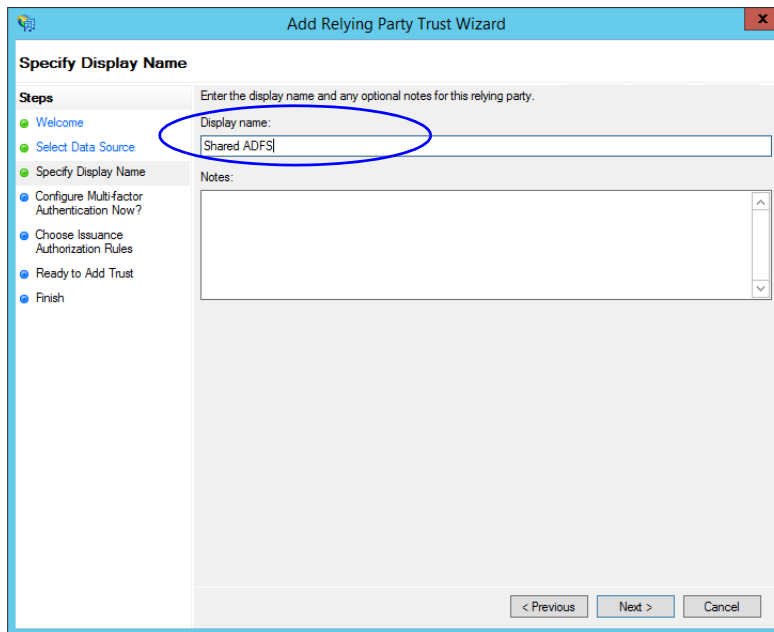
Click Add Relying Party Trust

4. In the Add Relying Party Trust Wizard that appears, do the following:
  - a. On the Select Data Source screen, set the following options:
    - i. Select the **Import data about the relying party published online or on a local network** option.
    - ii. In the **Federation metadata address** field, provide the Shared AD FS server name.
    - iii. Click **Next**.



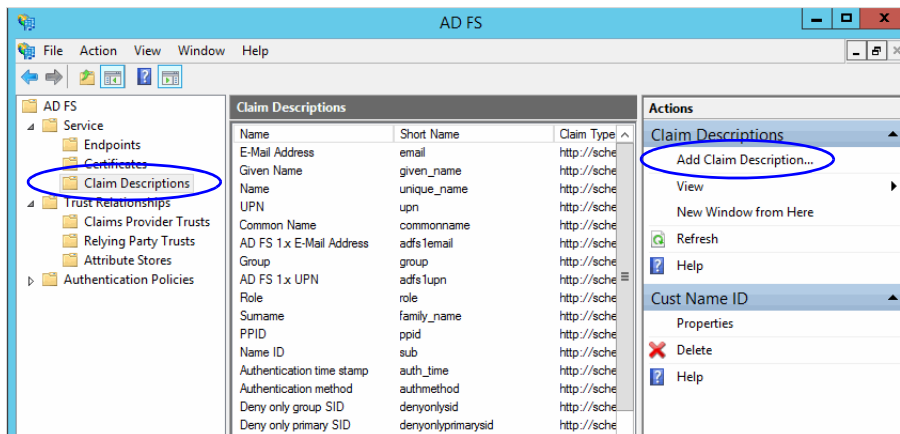
Select the data source options

- b. On the Specify Display Name screen, provide the **Display name**. Click **Next**.



*Provide a display name*

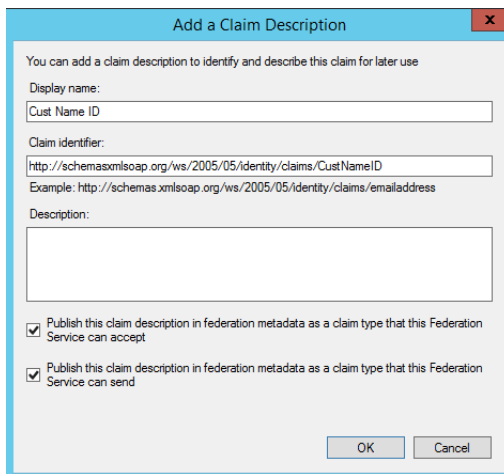
- c. In the screens that follow, do not alter the default values. Continue to click the **Next** button in the wizard until a trust is created. At the end, an entry is created in the Relying Party Trusts list.
5. In the AD FS Management console, navigate to **Services > Claim Descriptions**.
6. In the Actions section, go to Claim Descriptions, and click **Add Claim Descriptions...**



*Click Add Claim Description*

7. In the Add a Claim Description window, provide the following details:
  - a. Set the **Display name** as **Cust Name ID**.
  - b. Set the **Claim identifier** as **http://schemas.xmlsoap.org/ws/2005/05/identity/claims/CustNameID**
  - c. Select the **Publish the claim description in federation metadata as a claim type that this Federation Service can accept** option.

- d. Select the **Publish the claim description in federation metadata as a claim type that this Federation Service can send** option.
- e. Click **OK** to close the window.



**Add a Claim Description**

You can add a claim description to identify and describe this claim for later use

Display name:  
Cust Name ID

Claim identifier:  
http://schemas.xmlsoap.org/ws/2005/05/identity/claims/CustNameID  
Example: http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress

Description:

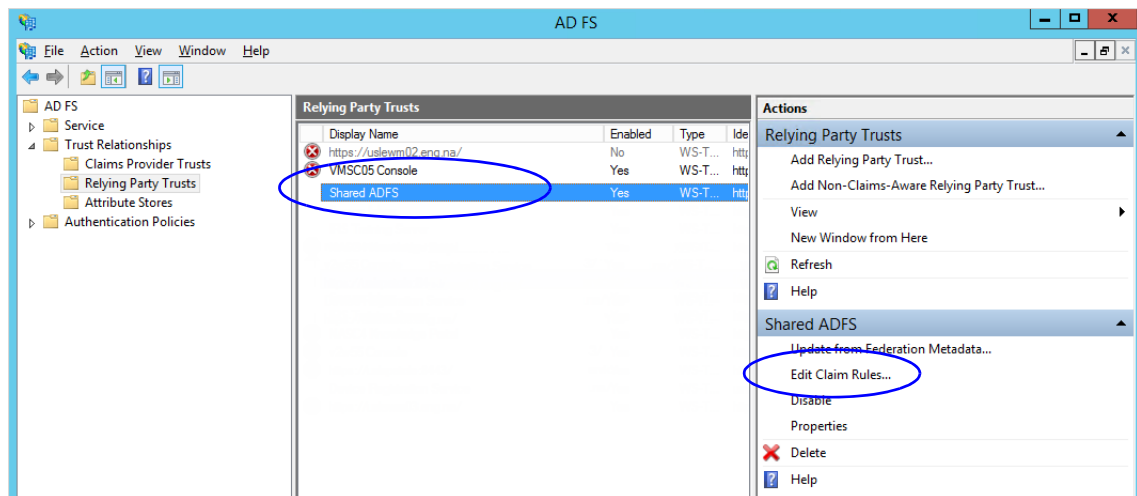
☒ Publish this claim description in federation metadata as a claim type that this Federation Service can accept

☒ Publish this claim description in federation metadata as a claim type that this Federation Service can send

OK Cancel

*Provide the claim description*

8. In the Relying Party Trusts list, select the Shared AD FS entry and in the Actions section, click **Edit Claims Rules**.

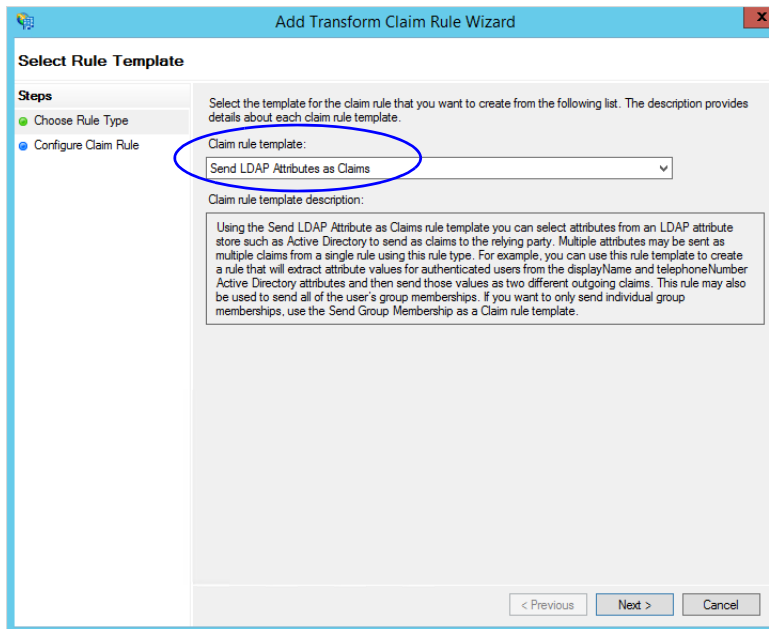


*Click Edit Claims Rules*

9. In the Edit Claim Rules for Shared AD FS window, in the Issuance Transform Rules tab, click the **Add Rule...** button.

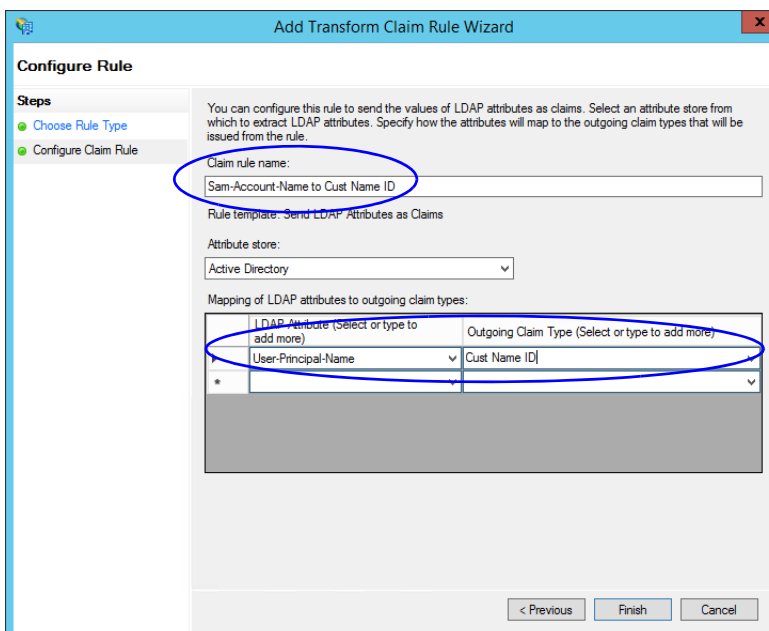
In the Add Transform Claim Rule wizard that opens, do the following:

- a. On the Choose Rule Type screen, from the **Claim rule template**, select **Send LDAP Attributes as Claims**. Click **Next**.



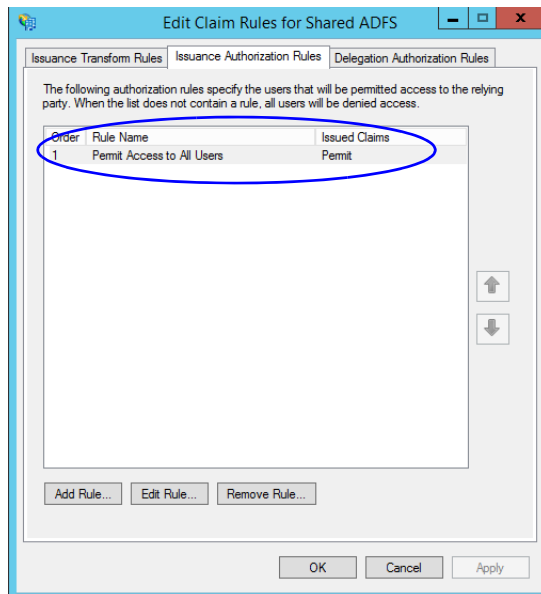
*Select the claim rule template*

- b. On the Configure Claim Rule screen, do the following:
  - i. Provide a claim rule name.
  - ii. Define mapping of LDAP attribute and the outgoing claim type. The outgoing claim type name must be unique across all the claims defined in all relying party trusts created on this AD FS server. Click **Finish** to go back to the Edit Claim Rules for Shared AD FS window.



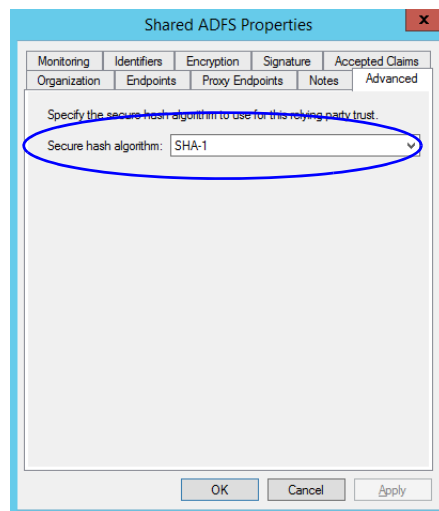
*Configure the claim rule*

10. In the Edit Claim Rules for Shared AD FS window, in the Issuance Authorization Rules tab, ensure that the rule permits access to all users. Click **OK** to close the window.



*Check the authorization rules*

11. In the Relying Party Trusts list, double-click the relying party trust which you created. In the Properties window that opens, go to the Advanced tab and set the **Secure hash algorithm** to **SHA-1**. Click **OK** to close the window.



*Set the secure hash algorithm*

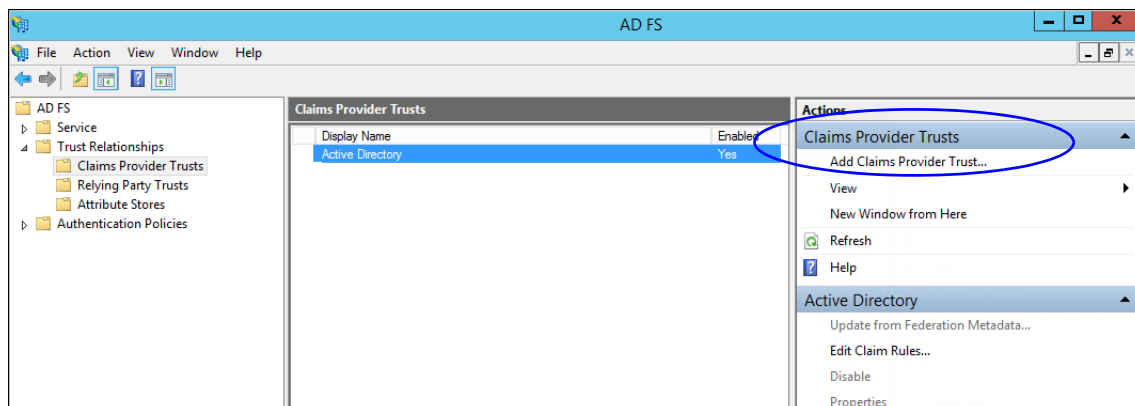
## Configuring Claims Provider Trust for Customer AD FS in Shared AD FS

Perform these tasks on the server where shared AD FS is installed.

### To configure claims provider trust for customer AD FS in shared AD FS:

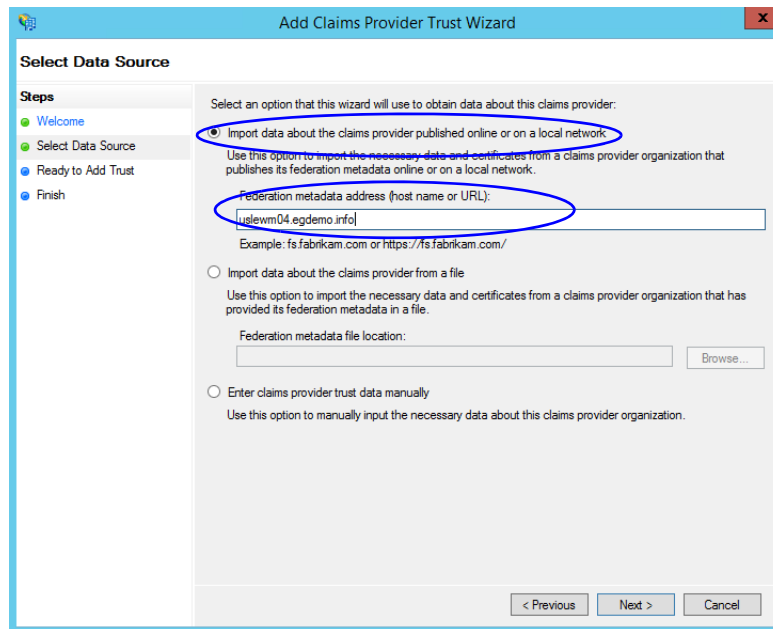
1. Go to the Start menu and open the AD FS Management console.

2. In the AD FS Management console, navigate to **AD FS > Trust Relationships > Claims Provider Trust**.
3. In the Actions section, go to Claim Provider Trusts, and click **Add Claims Provider Trust...**



*Add claims provider trust*

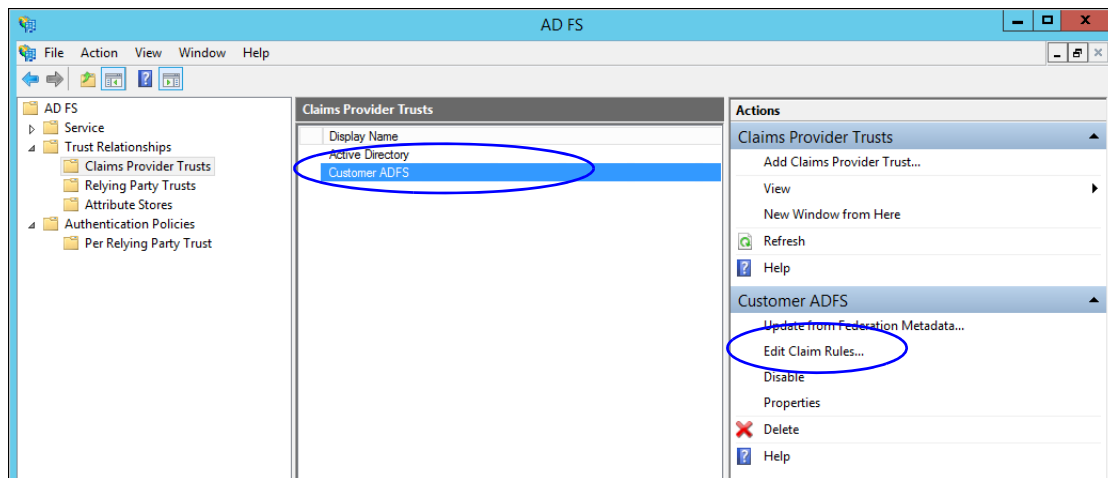
4. In the Add Claims Provider Trust Wizard that appears, do the following:
  - a. On the Select Data Source screen, set the following options:
    - i. Select the **Import data about the claims provider published online or on a local network** option.
    - ii. In the **Federation metadata address** field, provide the Customer AD FS server name.
    - iii. Click **Next**.



*Set the data source*

- b. In the Specify Display Name screen, provide the **Display name**. Click **Next**.
- c. In the screens that follow, do not alter the default values. Continue to click the **Next** button in the wizard until a trust is created. At the end, an entry is created in the Claim Provider Trusts list.

5. In the Claim Provider Trusts list, select the Shared AD FS entry and click **Edit Claim Rules**.

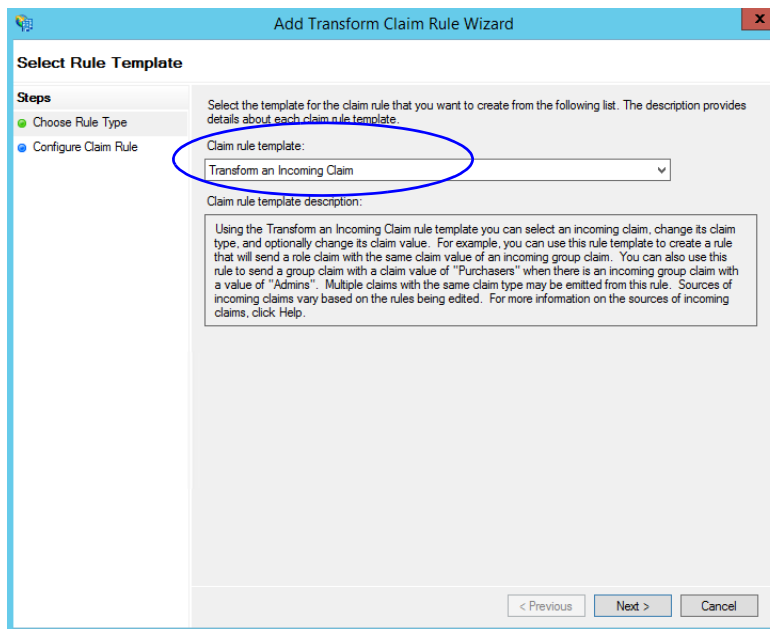


*Edit the claim rules*

6. In the Edit Claim Rules for Customer AD FS window, in the Acceptance Transform Rules tab, click the **Add Rule...** button.

In the Add Transform Claim Rule wizard that opens, do the following:

- a. On the Choose Rule Type screen, select **Transform an Incoming Claim** as the claim rule template. Click **Next**.



*Choose the claim rule template*

- b. On the Configure Claim Rule screen, set the following:
- i. Provide the claim rule name as **Cust Name ID**.

- ii. In the **Incoming claim type** field provide the name as **http://schemas.xmlsoap.org/ws/2005/05/identity/claims/CustNameID**. This is the same value as provided while creating the claim rule description (page 78).
- iii. Set the Outgoing claim type as **Cust Name ID**.
- iv. Select the **Pass through all claim values** option.

**Edit Rule - Cust Name ID**

You can configure this rule to map an incoming claim type to an outgoing claim type. As an option, you can also map an incoming claim value to an outgoing claim value. Specify the incoming claim type to map to the outgoing claim type and whether the claim value should be mapped to a new claim value.

Claim rule name:

Rule template: Transform an Incoming Claim

Incoming claim type:

Incoming name ID format:

Outgoing claim type:

Outgoing name ID format:

☒ Pass through all claim values

☐ Replace an incoming claim value with a different outgoing claim value

Incoming claim value:

Outgoing claim value:

☐ Replace incoming e-mail suffix claims with a new e-mail suffix

New e-mail suffix:

*Configure the claim rule*

- c. Click **Finish**. Claim is created and is displayed in the Edit Claim Rules for Customer AD FS window.
7. In the Claim Provider Trusts list, double-click the claim provider trust which you created. In the Properties window that opens, go to the Advanced tab and set the **Secure hash algorithm** to **SHA-1**. Click **OK** to close the window.

**Customer ADFS Properties**

Monitoring Identifiers Certificates Encryption

Offered Claims Organization Endpoints Notes Advanced

Specify the secure hash algorithm to use for this claims provider trust.

Secure hash algorithm:

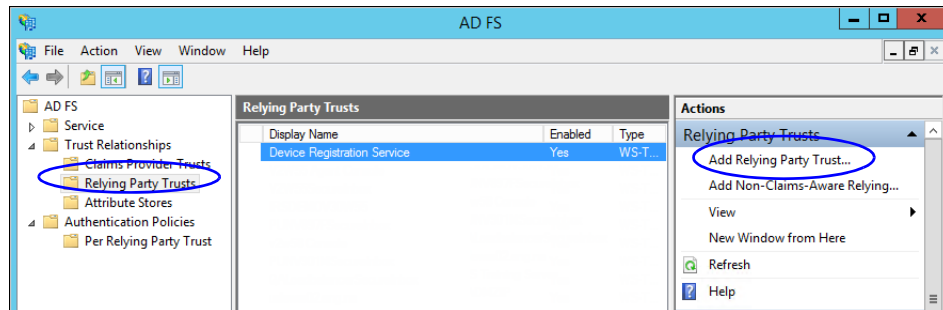
*Set the secure hash algorithm*

# Configuring Relying Party Trust for ECE in Shared AD FS

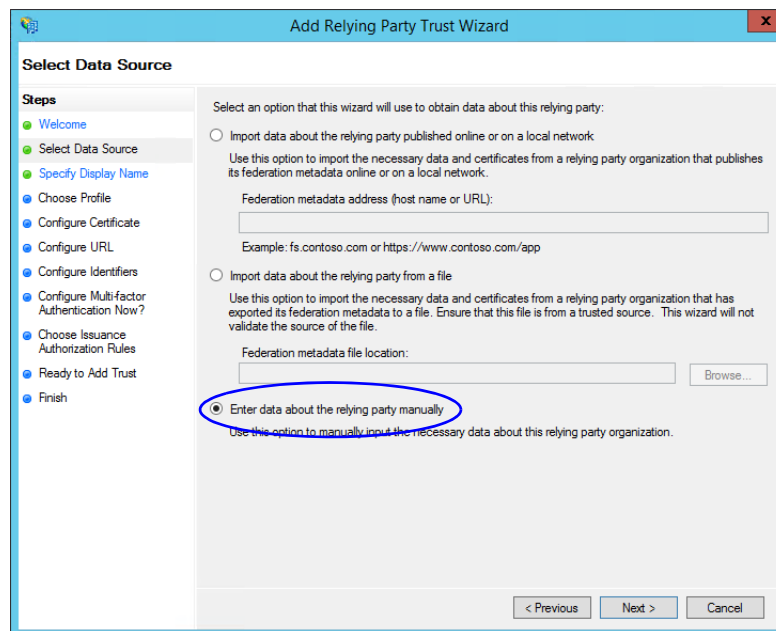
Perform these tasks on the server where shared AD FS is installed.

## To configure relying party trust for ECE in shared AD FS:

1. Go to the Start menu and open AD FS Management console.
2. In the AD FS Management console, navigate to **AD FS > Trust Relationships > Relying Party Trust**.
3. In the Actions section, go to Relying Party Trust, and click **Add Relying Party Trust...**



4. In the Add Relying Party Trust Wizard that appears, do the following:
  - a. On the Welcome screen, click **Start**.
  - b. On the Select Data Source screen, select the **Enter data about the reply party manually** option and click **Next**.



Select the *Enter data about the reply party manually* option

- c. On the Specify Display Name screen, provide a **Display name** for the relying party. Click **Next**.

The screenshot shows the 'Specify Display Name' step of the 'Add Relying Party Trust Wizard'. The left sidebar lists the steps: Welcome, Select Data Source, Specify Display Name (current), Choose Profile, Configure Certificate, Configure URL, Configure Identifiers, Configure Multi-factor Authentication Now?, Choose Issuance Authorization Rules, Ready to Add Trust, and Finish. The main area has a 'Display name:' label with a text box containing 'v2w55 Console', which is circled in blue. Below it is a 'Notes:' text area. At the bottom are '< Previous', 'Next >', and 'Cancel' buttons.

*Provide a display name*

- d. On the Choose Profile screen, select **AD FS profile** and click **Next**.

The screenshot shows the 'Choose Profile' step of the 'Add Relying Party Trust Wizard'. The left sidebar is the same as the previous screen, with 'Choose Profile' highlighted. The main area contains instructions: 'This wizard uses configuration profiles to aid in creating the relying party trust. Choose the appropriate configuration profile for this relying party trust.' There are two radio button options: 'AD FS profile' (selected and circled in blue) and 'AD FS 1.0 and 1.1 profile'. Descriptive text for each profile is provided. At the bottom are '< Previous', 'Next >', and 'Cancel' buttons.

*Select AD FS profile*

- e. On the configure Certificate screen, click **Next**.
- f. On the Configure URL screen, set the following:
- Select the **Enable support for the SAML 2.0 Web SSO protocol** option.

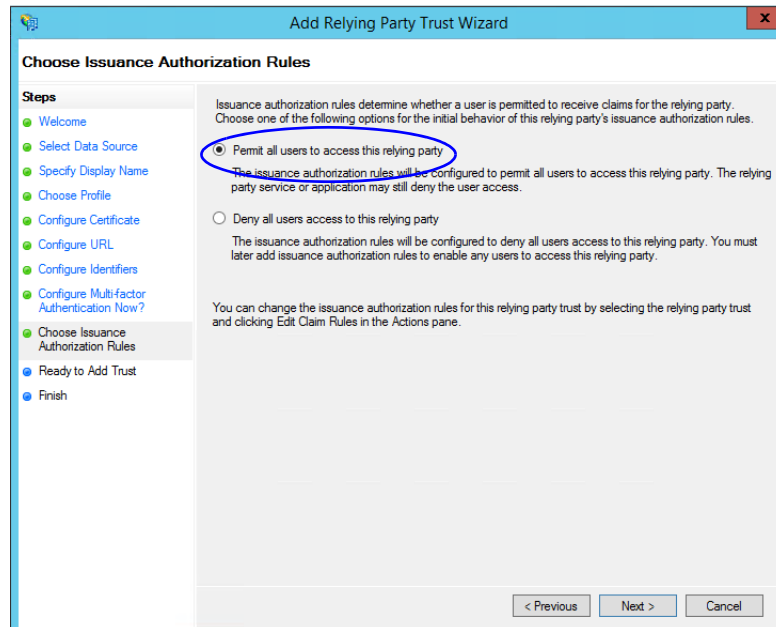
- ii. In the **Relying Party SAML 2.0 SSO server URL** field provide the URL in the format:  
`https://Web_Server_Or_Load_Balancer_Server/system/SAML/SSO/POST.controller`.  
 Replace *Web\_Server\_Or\_Load\_Balancer\_Server* with the ECE web server name or the Load balancer server name.

*Configure the URL*

- g. On the **Configure Identifiers** screen, provide the **Replying party trust identifier** and click **Add**. Value should be in the format: `https://Web_Server_Or_Load_Balancer_Server/`. Replace *Web\_Server\_Or\_Load\_Balancer\_Server* with the ECE web server name or the Load balancer server name. Click **Next**.

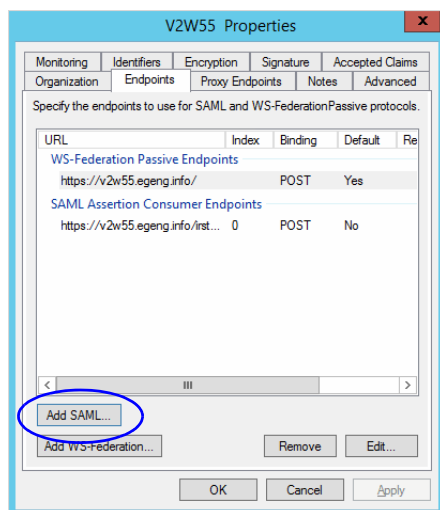
*Configure the identifiers*

- h. On the next screen, select the **I do not want to configure multi-factor authentication settings for the relying party trust at this time** option.
- i. On the Choose Issuance Authorization Rules screen, select the **Permit all users to access this relying party** option.



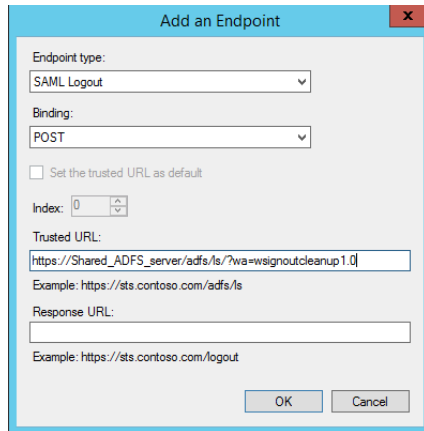
Select the *Permit all users to access this relying party* option

- j. On the Ready to add trust screen, click **Next**.
- k. Uncheck the **Open the Edit Claim Rules dialogue for this relying party trust when the wizard closes** option and click **Close**. At the end, an entry is created in the Relying Provider Trusts list.
5. In the Relying Provider Trusts list, select the trust created for ECE, and in the actions section click **Properties**.
6. In the Properties window, go to the Endpoints tab and click the **Add SAML..** button.



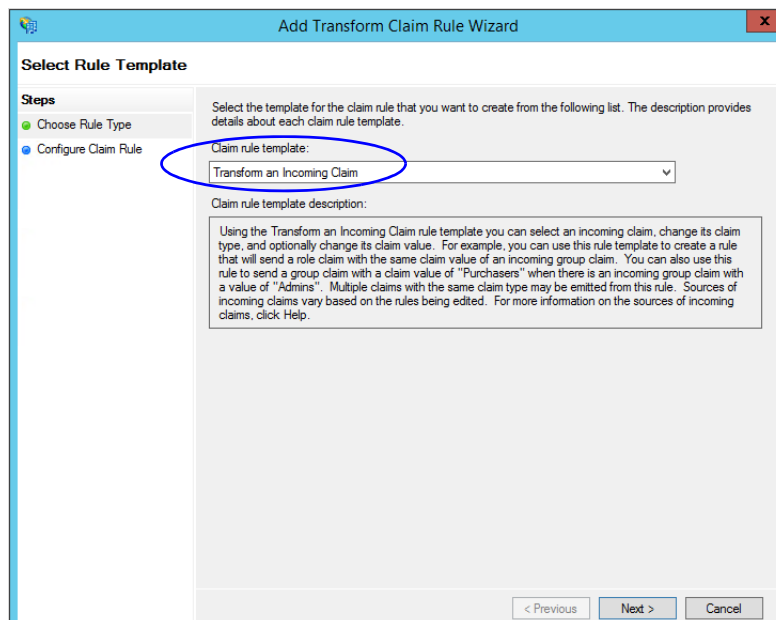
Click *Add SAML*

7. In the Add an Endpoint window, set the following:
  - a. Select the **Endpoint type** as **SAML Logout**.
  - b. Specify the **Trusted URL** as `https://Shared_ADFS_server/adfs/ls/?wa=wsignoutcleanup1.0`. Replace `shared_ADFS_server` with the Shared AD FS server name.
  - c. Click **OK**.



*Create an end point*

8. In the Relying Provider Trusts list, select the trust created for ECE, and in the actions section click **Edit Claim Rules**.
9. In the Edit Claim Rules window, in the Issuance Transform Rules tab, click the **Add Rule...** button.  
In the Add Transform Claim Rule wizard that opens, do the following:
  - a. On the Select Rule Template screen, from the **Claim rule template** dropdown, select **Transform an Incoming Claim**. Click **Next**.



*Select the claim rule template*

- b. On the Configure Rule screen, set the following:
  - i. Provide the Claim rule name.
  - ii. In the **Incoming claim type** field provide the name of the outgoing claim specified in the Relying Party trust wizard (page 80).
  - iii. In the **Outgoing claim type** dropdown, select the **Name ID** option.

**Add Transform Claim Rule Wizard**

**Configure Rule**

Steps:

- Choose Rule Type
- Configure Claim Rule

You can configure this rule to map an incoming claim type to an outgoing claim type. As an option, you can also map an incoming claim value to an outgoing claim value. Specify the incoming claim type to map to the outgoing claim type and whether the claim value should be mapped to a new claim value.

Claim rule name:

Rule template: Transform an Incoming Claim

Incoming claim type:

Incoming name ID format:

Outgoing claim type:

Outgoing name ID format:

☒ Pass through all claim values  
☐ Replace an incoming claim value with a different outgoing claim value  
 Incoming claim value:   
 Outgoing claim value:    
☐ Replace incoming e-mail suffix claims with a new e-mail suffix  
 New e-mail suffix:   
 Example: fabrikam.com

< Previous Finish Cancel

*Configure the rule*

10. In the Edit Claim Rules window, in the Issuance Authorization Rules tab, ensure that the rule permits access to all users. Click **OK** to close the window.

**Edit Claim Rules for uslewm02.eng.na**

Issuance Transform Rules Issuance Authorization Rules Delegation Authorization Rules

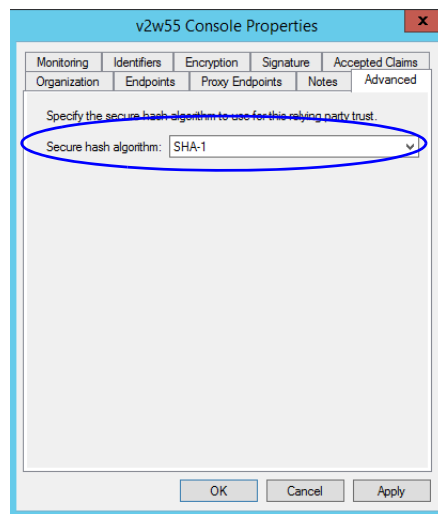
The following authorization rules specify the users that will be permitted access to the relying party. When the list does not contain a rule, all users will be denied access.

| Order | Rule Name                  | Issued Claims |
|-------|----------------------------|---------------|
| 1     | Permit Access to All Users | Permit        |

OK Cancel Apply

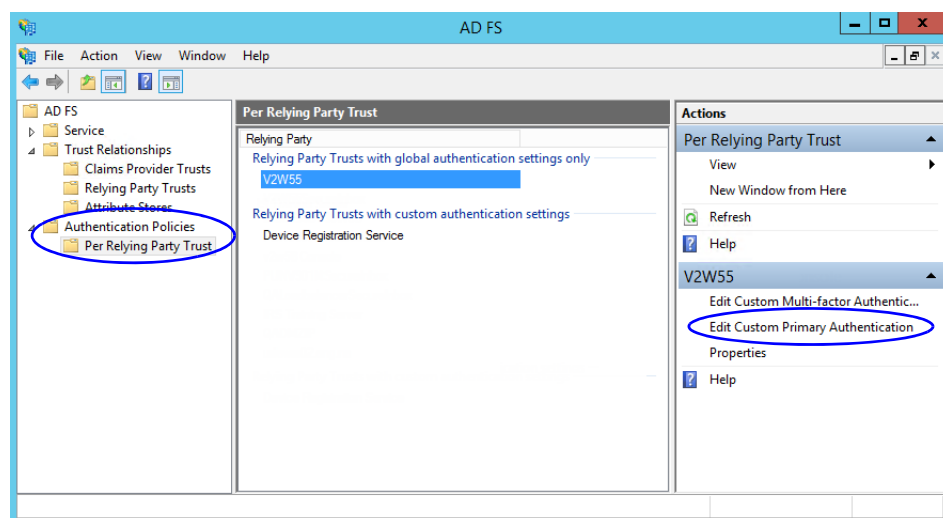
*Check the authorization rules*

11. In the Relying Provider Trusts list, double-click the relying party trust which you created. In the Properties window that opens, go to the Advanced tab and set the **Secure hash algorithm** to **SHA-1**. Click **OK** to close the window.



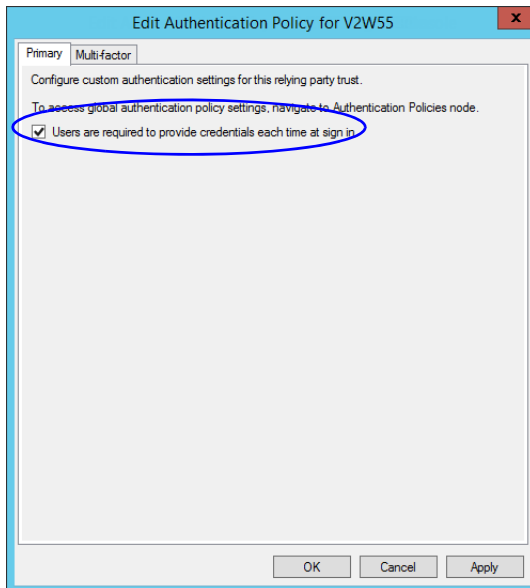
*Set the secure hash algorithm*

12. Next, in the AD FS Management console, go to the **Authentication Policy > Per Relying Party Trust**. Locate the Relying Party Trust created for ECE, and in the Actions section click **Edit Custom Primary Authentication**.



*Change the authentication policy for ECE*

13. In the Edit Authentication Policy window, in the Primary tab, select the **Users are required to provide credentials each time at sign in** option. Click **OK** to close the window.



*Edit the authentication policy*

## Configuring Single Sign-On in ECE

- Follow instruction in the “Single Sign-On” chapter of the *Enterprise Chat and Email Administrator’s Guide to Administration Console* to complete the single sign-on configuration in ECE.



# SSL Configuration

- ▶ [Installing a Security Certificate](#)
- ▶ [Binding the Certificate to the Application Website](#)
- ▶ [Testing SSL Access](#)
- ▶ [Configuring SSL or TLS for Retriever and Dispatcher Services](#)

Secure Sockets Layer (SSL) is widely used to create a secure communication channel between web browsers and servers. Set up SSL for more secure connections to your ECE installation by following the procedures described in this chapter. If the configuration uses a load balancer, configure SSL on the load balancer.



**Important:** You must perform these tasks before using the application.

## Installing a Security Certificate

This section explains the procedures that you must perform to acquire a certificate and install it on the web server. These include:

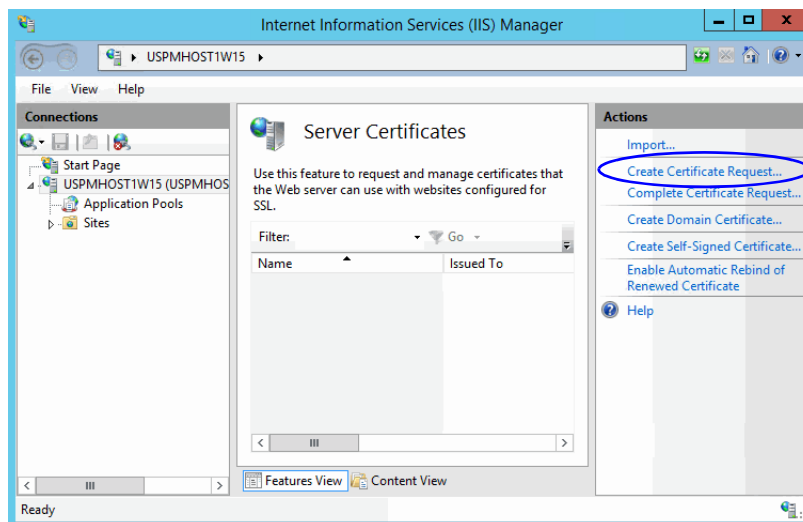
- ▶ [Generating a Certificate Signing Request](#)
- ▶ [Submitting the Certificate Request](#)
- ▶ [Installing the Certificate on the Web Server](#)

### Generating a Certificate Signing Request

This procedure creates a new certificate request, which is then sent to a Certificate Authority (CA) for processing. If successful, the CA will send back a file containing a validated certificate.

#### To generate a certificate request:

1. Click the **Start** menu, go to **Control Panel > Administrative Tools**, and select **Internet Information Services (IIS) Manager**.
2. In the Connections pane, select the name of the server, and when the page is refreshed, double-click **Server Certificates**. The window is refreshed.
3. In the Actions pane on the right, click the **Create Certificate Request...** link.



Click the *Create Certificate Request* link

4. In the Distinguished Name Properties window, enter information about the company and the site to be secured:
- **Common Name:** The fully qualified domain name (FQDN) of your server. This must match exactly what users type in the web browser to get to the application. If you are using a load balancer, enter the name of the server on which the load balancer is installed.
  - **Organization:** The legal name of your organization. This should not be abbreviated and should include suffixes such as Inc, Corp, or LLC.
  - **Organizational Unit:** The division of your organization handling the certificate.
  - **City/locality:** The city where your organization is located.
  - **State/province:** The complete name of the state or region where your organization is located.
  - **Country/region:** The two-letter ISO code for the country where your organization is located.
- Click **Next**.
5. In the Cryptographic Service Provider window, select a cryptographic service provider and set the required bit length. The greater the bit length, the stronger the security. Click **Next**.

Request Certificate

**Cryptographic Service Provider Properties**

Select a cryptographic service provider and a bit length. The bit length of the encryption key determines the certificate's encryption strength. The greater the bit length, the stronger the security. However, a greater bit length may decrease performance.

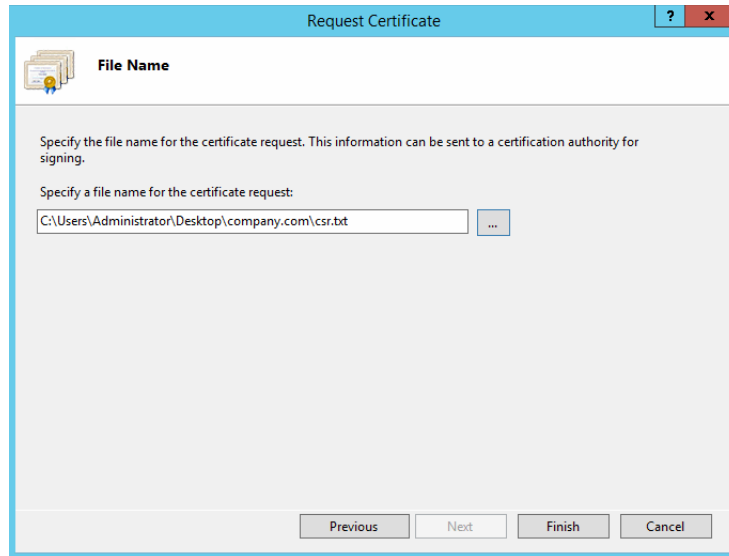
Cryptographic service provider:  
Microsoft RSA SChannel Cryptographic Provider

Bit length:  
2048

Previous Next Finish Cancel

*Select a cryptographic service provider and bit length*

6. In the File Name window, click the **Assistance ...** button and browse to the location where you wish to save the certificate signing request file. Ensure that you enter a file name for the certificate signing request file. Click **Finish**.



*Enter the location and file name*

Once you have generated a certificate signing request, you can submit the certificate request to a certificate authority.

## Submitting the Certificate Request

### To submit the certificate request:

- Go to the website of the company that issues SSL certificates (such as VeriSign), and submit your certificate request. Make sure you provide the same information as you provided while generating the certificate signing request. To submit the request, you will need the certificate request file that you generated ([page 94](#)).

Once the request is processed, the vendor will generate the certificate and send it to you.

## Installing the Certificate on the Web Server

Once you receive the certificate from your vendor, install it on all web servers. If you are using load balancer, install it on the load balancer server.

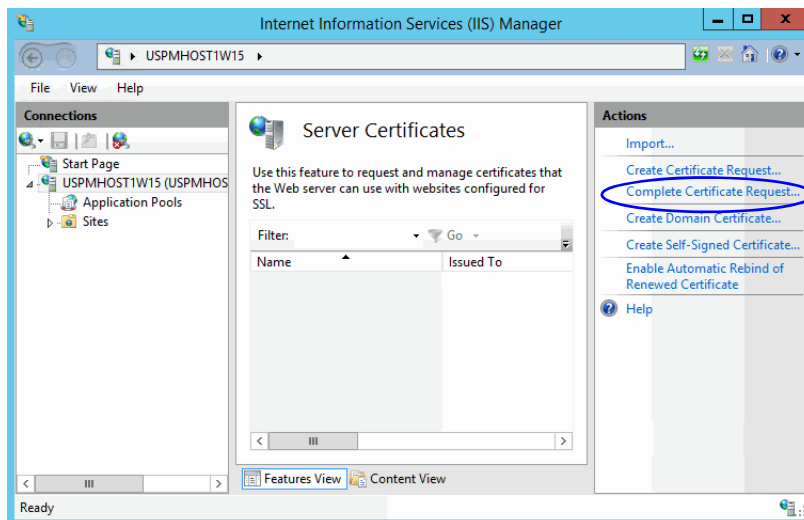


**Important:** You need to install the certificate for the website that was specified when the web server component was installed.

### To install the certificate on the web server:

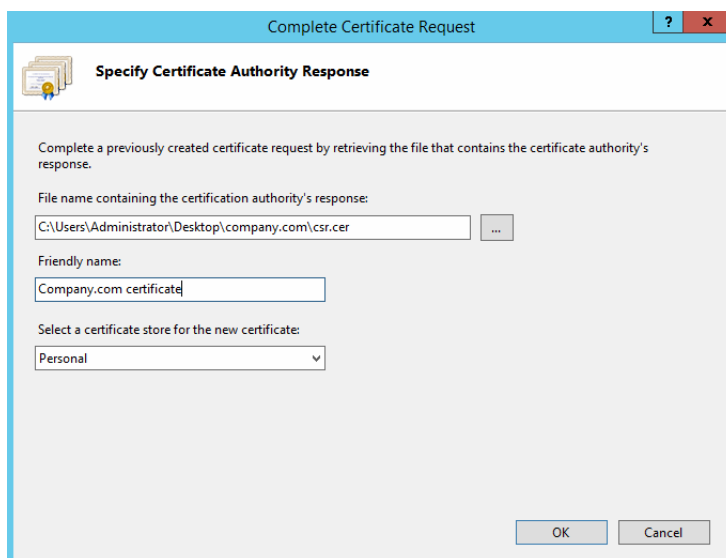
1. Click the **Start** menu, go to **Administrative Tools**, and select **Internet Information Services (IIS) Manager**.

2. In the Connections pane, select the name of the server, and when the page is refreshed, double-click **Server Certificates**. The window is refreshed.
3. In the Actions pane on the right, click the **Complete Certificate Request...** link.



Click the *Complete Certificate Request* link

4. In the Specify Certificate Authority Response window, complete these tasks:
  - Click the **Assistance ...** button and select the server certificate that you received from the certificate authority. If the certificate doesn't have a .cer file extension, select to view all types.
  - Enter a name for the certificate. Click **OK**.



Browse to the server certificate file

5. Verify that the certificate is added to the list of server certificates.

# Binding the Certificate to the Application Website

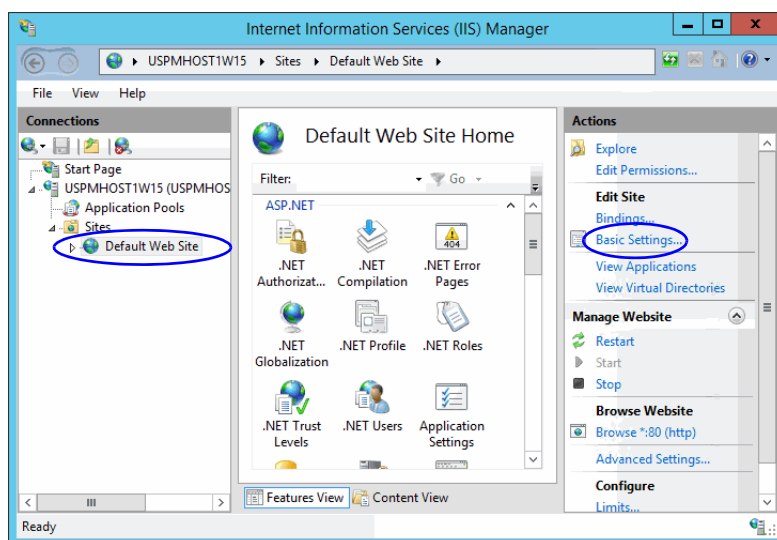
This procedure uses Internet Services Manager to configure the virtual directory to require SSL for access to the application URL.



**Important:** You need to configure the SSL access for the website that was selected when the web server component was selected.

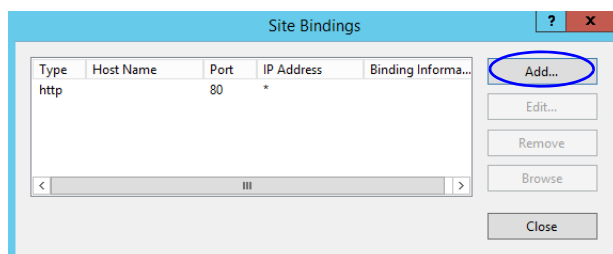
## To bind the certificate to the application URL:

1. Click the **Start** menu, go to **Administrative Tools**, and select **Internet Information Services (IIS) Manager**.
2. In the Connections pane, select the name of the server and browse to **Sites** > *Web\_Site\_Name*.



Select the *Web\_Site\_Name*.

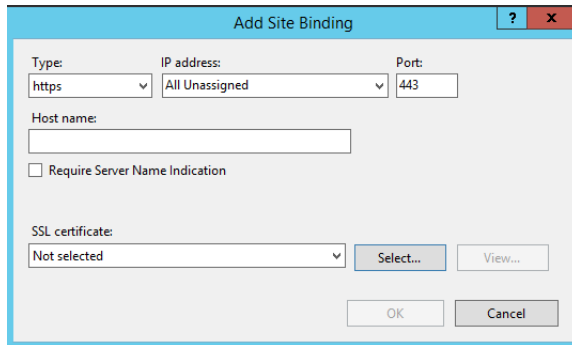
3. In the Actions pane on the right, from the Edit Site section, click the **Bindings...** link.
4. In the Site Bindings window, click the **Add...** button.



Click the **Add** button

5. In the Add Site Bindings window, complete these tasks:
  - **Type:** Select **https**.
  - **IP address:** Select **All Unassigned**.
  - **Port:** Default value is 443. If IIS is configured to use a different port for https, enter that port number.

- **SSL certificate:** Select the certificate that you installed. Click **OK**.



*Select SSL certificate*

6. The site binding for port 443 is displayed.
7. Restart the IIS Service. Make sure that both websites have started.  
Clients browsing to this virtual directory must now use HTTPS.

## Testing SSL Access

### To test SSL access to ECE:

1. Open your web browser.
2. Use HTTP in the URL for the application. For example, `http://Web_server_FQDN/Partition_name`  
You should see a message asking you to view the page over a secure channel.
3. Now use HTTPS in the URL for the application. For example, `https://Web_Server_FQDN/Partition_name`.
4. In the security message that appears, click the **View certificate** button.
5. After verifying the certificate information, click **OK**, then click **Yes** to proceed to the URL.  
The ECE login window appears.

## Configuring SSL or TLS for Retriever and Dispatcher Services



**Important:** This feature is available after you upgrade to ECE 11.6.

You need to perform these tasks only if you want to enable the retriever and dispatcher services to work with SSL or TLS enabled mail servers. POP3, IMAP, SMTP, and ESMTP protocols are supported.

To configure TLS and SSL, you must:

- Install the certificates on the services servers. ([page 100](#))
- a. Modify the alias configuration ([page 101](#))

## On the Services Server

If your POP3, IMAP, SMTP, and ESMTP servers are installed on different machines, obtain the certificates for all the servers and install them on the services servers.

### Installing Certificates

#### To configure SSL or TLS on the services server:

1. Obtain the certificate for the SSL or TLS enabled mail server on which the email alias is configured. If your POP3, IMAP, SMTP, and ESMTP servers are installed on different machines, obtain the certificates for all the servers.

2. Copy the certificates to a location in *Cisco\_Home*.

3. Open the Command window and navigate to the `bin` folder in the `jre` folder in *JDK\_Home*, the installation folder for JDK. For example, the command will look like:

```
cd C:\InstallFolder\Java\jdk1.8.0_60\jre\bin
```

4. Execute the following command to install the certificate:

```
keytool -import -trustcacerts -alias ALIAS_NAME -keystore  
"..\lib\security\cacerts" -file "CERTIFICATE_FILE_PATH"
```

where:

*CERTIFICATE\_FILE\_PATH* is the complete path to the certificate that you copied in [Step 2](#), including the name of the file.

*Alias\_Name* is any name you want to assign to the certificate.

For example the command will look like:

```
keytool -import -trustcacerts -alias emailcertificate -keystore  
"..\lib\security\cacerts" -file "D:\eG\ms_exchange_certificate.cer"
```

5. When prompted, provide the keystore password. If you had changed the keystore password earlier, provide that password. If not, provide the default password, `changeit`.
6. Confirm the action when prompted.
7. To verify that the certificate is installed successfully, run the following command:

```
keytool -list -v -keystore "..\lib\security\cacerts" -alias ALIAS_NAME
```

where *Alias\_Name* is the name you assigned to the certificate in [Step 4](#).

For example, the command will look like:

```
keytool -list -v -keystore "..\lib\security\cacerts" -alias emailcertificate
```

8. When prompted, provide the keystore password.

The output will list the installed certificate.

## Deleting Certificates

Certificates generally have an expiry date. When your certificate expires, you might need to delete the old certificates and install new ones. The following section describes the steps for deleting the certificates. After deleting the certificates, repeat the steps in [“Installing Certificates” on page 100](#) to install new certificates.

### To delete a certificate:

1. Open the Command window and navigate to the `bin` folder in the `jre` folder in *JDK\_Home*, the installation folder for JDK. For example, the command will look like:

```
cd C:\InstallFolder\Java\jdk1.8_65\jre\bin
```

2. Execute the following command to delete the certificate:

```
keytool -delete -alias ALIAS_NAME -keystore "..\lib\security\cacerts"
```

where:

*Alias\_Name* is the name you assigned to the certificate in [Step 4](#).

For example the command will look like:

```
keytool -delete -alias emailcertificate -keystore "..\lib\security\cacerts"
```

3. When prompted, provide the keystore password. If you had changed the keystore password earlier, provide that password. If not, provide the default password, `changeit`.

## In the Administration Console



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**Important:** These options in the Administration Console are available in systems upgraded to ECE 11.6.

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### To enable SSL for specific aliases:

1. Log into the application as an administrator who can modify the email alias configuration and go to the Administration Console.
2. In the Tree pane, browse to **Administration > Departments** > *Department\_Name* > **Email > Aliases**.
3. In the List pane, select the appropriate email alias.
4. In the Properties pane, go to the Servers tab and edit the following fields.
  - **Connection type:** Set this to **SSL** or **TLS**.
  - **Port:** Enter the secure port number.

Properties: Marketing

General Servers

|          | Name              | Value        |
|----------|-------------------|--------------|
| Incoming | Server type       | POP3         |
| Outgoing | Server name *     | EMS2K        |
|          | User name *       | user@company |
|          | Password *        | *****        |
|          | Verify password * | *****        |
|          | Connection type   | SSL          |
|          | Port *            | 995          |
|          | Folder *          | inbox        |

*Configure the alias properties*

5. Repeat these steps for the Outgoing mail server, if required.
6. Save the changes.